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1984 ANNUAL REPORT

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

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General Manager James F. O'Leary, left, receiving Urban Mass Transportation Administration's (UMTA) Outstanding Public Service Award from UMTA Administrator Ralph L. Stanley. State Transportation Secretary Frederick P. Salvucci is pictured at right.

Cover Photo: $44.9 million Porter Station, Cambridge, on the 3.2-mile Red Line Northwest Extension.

Photo by Christopher Barnes ©

LETTER OF TRANSMITTAL

TO: His Excellency the Governor, The General Court
The Secretary of Transportation and the Advisory Board
to the Massachusetts Bay Transportation Authority

The Board of Directors of the Massachusetts Bay Transportation Authority, in accordance with the requirements of Section 5 (h) of Chapter 161A of the General Laws, hereby submits the Authority's Annual Report covering operations for the calendar year 1984. Included in the report is a description of the organization, recommendations for legislation and the comprehensive program for mass transportation prepared by the Executive Office of Transportation and Construction. Also included are departmental reports on accomplishments during 1984.

The net assessable cost of service, interest charged by the State Treasurer and Boston Metropolitan District expense must be considered by the 78 cities and towns in their settlement with the Commonwealth of their 1984 accounts in November, 1985. The accounts are as follows:

	Without Additional State Aid	**With Additional Aid of $125,543,540.23**
Net Assessable Cost of Service	$219,313,203.61	$93,769,663.38
Interest Charged by State Treasurer on Temporary Borrowings	8,534,946.00	8,534,946.00
Expense of Boston Metropolitan District	25,000.00	25,000.00
Net Cost to Communities	227,873,149.61	102,329,609.38

Chapter 140, Acts of 1985, the state budget for fiscal year 1986 beginning July 1, 1985, provided additional contract assistance in the amount of $125.5 million to allow cities and towns to be capped at an assessment of $102.3 million.

The following statement shows the Authority's comparative net cost of service including all elements of cost for calendar years 1984 and 1983.

The balance sheet and statement of long-term debt of the Massachusetts Bay Transportation Authority as of December 31, 1984, and the related statements of revenue and cost of service, reimbursed cost of service, and source of disposition of funds for the fiscal year ended December 31, 1984, together with notes relating to these financial statements, are appended to this report.

Respectfully submitted,

Board of Directors
Massachusetts Bay Transportation Authority

Frederick P. Salvucci
Chairman

Judith H. Robbins

Melba F. Hamilton

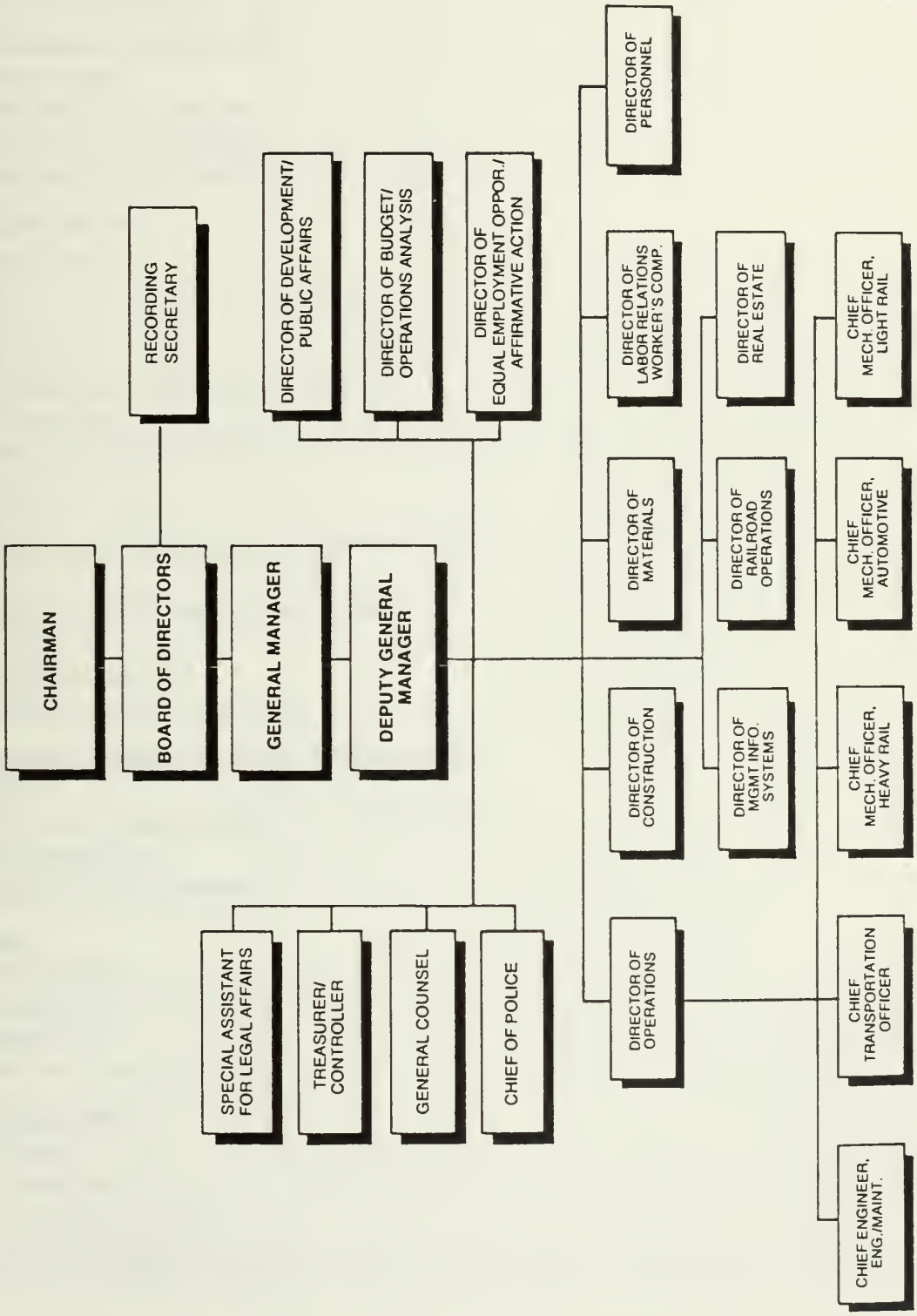
William F. Irvin

James E. Smith

Scott M. Stearns, Jr.

Melissa A. Tillman

ORGANIZATION CHART



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1984 BOARD OF DIRECTORS

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William F. Irvin
International Staff Representative, United Steel Workers of America, Vice President of Mass. AFL-CIO, actively involved in organized labor since 1950. Resides in Melrose.

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Graduated from Stanford University and received her MPA from Suffolk University; President of City Council, Attleboro, and professional management consultant.

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MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

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LETTER FROM THE GENERAL MANAGER

Frederick P. Salvucci, Chairman
and Members of the
Massachusetts Bay Transportation Authority
Board of Directors

Dear Mr. Chairman and Members of the Board of Directors:

1984 posed many challenges to the Massachusetts Bay Transportation Authority. We met construction goals and significantly improved our rail system despite two serious fires. We enhanced and enlarged our fleet of vehicles, despite budget constraints, through a cost-effective program of vehicle rehabilitation. And throughout this year of growth and reconstruction, we provided MBTA riders with reliable and expanded service. The MBTA operated more than 38.8 million revenue miles in 1984, served over 589,500 riders daily, and completed 98.6 percent of scheduled trips.

Revenue service commenced at Porter and Davis Square stations on the Red Line's Northwest Extension. The $572 million Red Line extension project advanced to 93 percent complete in 1984. The Southwest Corridor Project, Boston's largest construction job ever, was nearly two-thirds complete by year-end.

An ambitious $80 million program to completely modernize ten older Red Line and Orange Line stations was launched at Kendall Square station. Construction began on the South Station multi-modal Transportation Terminal Project. Twenty-six other stations were rehabilitated under our mini-mod program.

The serious fires that destroyed commuter rail bridges at North Station and Beverly/Salem in 1984 demanded rapid response from the Authority. Alternative connections for North Shore riders were effected within days of the disruptions. During reconstruction of the trestles, improvements were also made to North Station and the disabled railroad line.

A two-year reconstruction of the Southeast Expressway began in March, requiring the MBTA to provide greater capacity on commuter rail and bus alternatives, and expansion of Red Line and commuter boat services.

Fifty-eight new cars were ordered for the Red Line. Forty-four "Bluebirds" were completely overhauled and the 76-car "Silverbird" fleet began major rehabilitation. When complete, all of the MBTA's 164 Red Line vehicles will have been rebuilt.

Twenty GMC buses were returned to service after rehabilitation and an additional 80 buses began similar restoration.

Commuter Rail ridership decreased slightly to 11.2 million due to the bridge fires. Its on-time performance reached 97 percent. In September, the Mishawum station on the New Hampshire Line opened, the first new commuter rail station in three years.

THE RIDE expanded its service for special needs riders to Revere and Medford, bringing the total number of communities served to 14. Passenger trips increased 28 percent to nearly 118,000.

In 1984, as the result of Governor Michael S. Dukakis's MBTA Anti-Crime Program, crime decreased 21 percent and arrests increased 57 percent over 1983. In addition, 38 officers were added to the Police.

Over one million MBTA passes were sold in this 10th anniversary year of the pass program, accounting for nearly $30 million in revenue.

More than $4 million was saved through the use of creative financing methods by the Authority.

The MBTA ranked first in the nation for federal funds awarded to Disadvantaged Business Enterprises and second in dollars awarded to Women Business Enterprises.

Nearly a century since the advent of comprehensive mass transit in the Boston metropolitan area, the MBTA continues to grow and adapt. This report will inform you of the highlights of 1984's advances and achievements. It marks a solid record of performance for the Authority's 5,498 employees.

Thanks to the commitment of Governor Michael S. Dukakis to mass transportation and the able direction provided by you, the Board, we can look back on the year past with pride. And we look forward to the promise of better years to come.

Sincerely,

James F. O'Leary
General Manager

JAMES F. O'LEARY

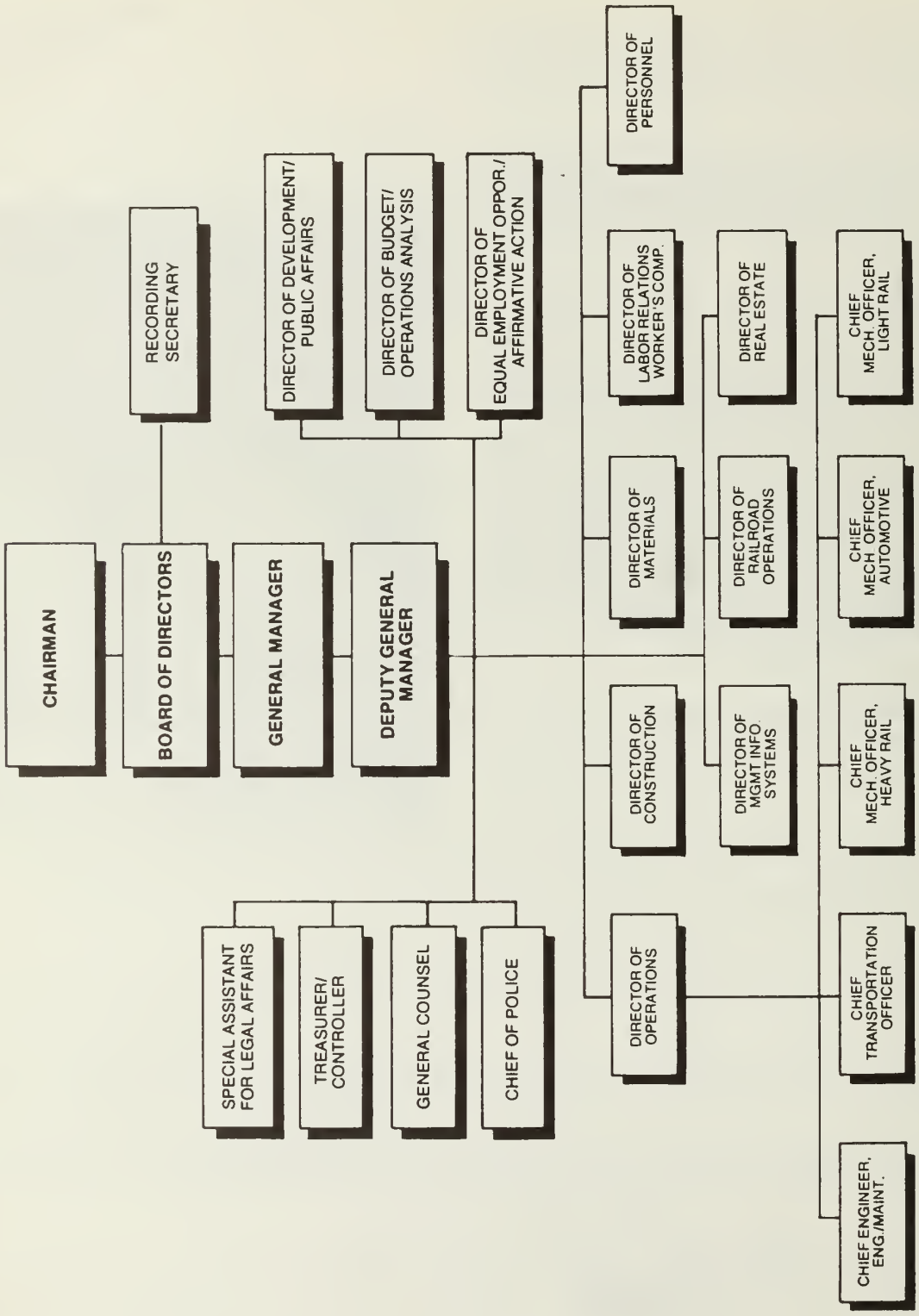
James F. O'Leary was appointed General Manager of the Massachusetts Bay Transportation Authority (MBTA) in 1981. He was reappointed by a unanimous vote of the Board of Directors on March 28, 1984.

Mr. O'Leary, 36, was named General Manager of the MBTA after serving two years as Undersecretary and General Counsel of the Executive Office of Transportation and Construction. He came to EOTC after serving as Legal Counsel to U.S. Representative John Joseph Moakley.

A graduate of the University of Massachusetts at Boston, Mr. O'Leary earned his Juris Doctor degree from Suffolk University in 1973. That same year he was admitted to the Massachusetts Supreme Judicial Court. He has served as treasurer of the Board of Governors of the UMASS Foundation and a board member of Southwest Boston Community Services.

O'Leary is a two-time winner of the Federal Urban Mass Transportation Administration's Outstanding Public Service Award. In 1982 he received the University of Massachusetts Outstanding Alumni Award and was named one of 10 Outstanding Young Leaders by the Boston Junior Chamber of Commerce.

ORGANIZATION CHART



Chairman	**Frederick P. Salvucci**
Board of Directors	**Melba Hamilton**
	William F. Irvin
	Judith H. Robbins
	James E. Smith
	Scott M. Stearns, Jr.
	Melissa A. Tillman
Recording Secretary	**Kathleen Hines**
General Manager	**James F. O'Leary**
Deputy General Manager	**Jane F. Daly**
Special Assistant for Legal Affairs	**Douglas M. Husid**
Treasurer-Controller	**Richard M. Brown**
General Counsel	**Walter B. Prince**
Chief of Police	**William J. Bratton**
Director of Development/Public Affairs	**Timothy F. Gens**
Director of Budget and Operations Analysis	**C. Richard Goff**
Director of Equal Employment Opportunity/Affirmative Action	**E. Gwynne Dilday**
Director of Operations	**John K. Leary, Jr.**
Director of Construction	**Francis M. Keville**
Director of Materials	**John F. Fitzgerald**
Director of Labor Relations and Worker's Compensation	**Robert J. Lewis**
Director of Personnel	**Lisa S. Zankman**
Director of Management Information Systems	**Richard G. Clark**
Director of Railroad Operations	**Eugene J. Sullivan**
Director of Real Estate	**Gino L. Palmacci**
Chief Engineer, Engineering/Maintenance	**Ralph L. Duvall**
Chief Transportation Officer	**Paul J. Lennon**
Chief Mechanical Engineer, Heavy Rail	**Francis X. Crowley**
Chief Mechanical Officer, Automotive	**Edward J. Dunn**
Chief Mechanical Officer, Light Rail	**Ronald J. MacKay**

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TRANSPORTATION

Transportation stressed programs to address rider needs in 1984, providing cleaner vehicles and stations, improved public address announcements and better on-time service performance.

MBTA systemwide ridership increased during 1984 by approximately 3.6 percent, to more than 160 million passenger trips.

An operating plan for revenue service on the Red Line extension was implemented on December 8 with the opening of Davis and Porter stations for revenue passengers. Red Line ridership increased by approximately 4,000 people per day.

Transportation also worked to assist those passengers stranded by the North Station and Beverly/Salem railroad bridge fires, and riders from Hull to Hingham inconvenienced when the South Shore Bus Company ceased operations on July 17.

In the summer, a computerized system to monitor and report disabled trains was introduced at the Central Control Command Center. The system, by use of throughput, provides tracking and analysis of revenue vehicle availability and vehicle failures-in-service throughout the day; eliminates the need for manual processing of data required for the Daily Service Report, and expedites the flow of information to the repair shops.

"Throughput" is the term used to measure, by half-hour intervals during the entire 20-hour service day, the actual number of trains going by a specific point on the line and compares it with the scheduled number of trains. This gives MBTA management an instantaneous picture, via computer terminals, of exactly how the service is doing. On the Red Line, 1984 throughput performance ranged between a high of 98 percent and a low of 85 percent. Green Line throughput ranged between 99.9 percent and 94.3 percent. Orange Line and Blue Line performance ranged between 108.6 percent and 97.6 percent, and 106.4 percent and 106.2 percent, respectively.

Peak hour service increased on more than a dozen bus routes. Evening and Sunday service improved on more than a dozen routes and Saturday or Sunday service was instituted on seven routes. Route 81 was created to shuttle Commuter Rail passengers between the Boston Engine Terminal and North Station after the North Station Railroad Bridge was destroyed by fire.

Service was also added to the Orange Line to transfer Commuter Rail passengers at the Oak Grove and Sullivan Square stations. Route 3 service was extended into the Army Base; Routes 8 and 96 were returned to their regular routing upon repair of bridges; Route 94 was instituted between Medford and Harvard Square; midday service on Route 16 was extended to Forest Hills to improve service to the Franklin Park Zoo; alternating trips on Route 52 were diverted to service the new Community Center complex in Newton, and five bus routes were re-routed to stop at the new Davis station.

The MBTA played a major role in providing alternative services during the Southeast Expressway reconstruction. The Authority added trips to eight local area bus routes and operated short trip service between Fore River and Quincy Center in order to supplement capacity on Routes 220 and 222. Capacity was added to the South Shore Branch of the Red Line by the institution of short trips between Quincy Center and Park Street during peak commuter hours.

In addition to expanded service on the Red Line and Commuter Rail, the MBTA administered federally-funded programs to increase boat and private bus services between Boston and the South Shore. Half-hourly commuter boat service between Hingham and downtown Boston was instituted with an increase of 450 peak-period seats. Twenty additional peak period trips were arranged with private bus operators adding 1,000 seats for travel to Boston from South Shore communities.

OPERATIONS

THE RIDE continued expansion of its service for special needs riders to Revere and Medford as well as to the remainder of Arlington and Newton, bringing the total number of communities served to 14. The number of individual passenger trips increased by nearly 28 percent to 117,774 trips. There are now 45 vans. In addition to expanding THE RIDE, the Office of Special Needs continued to monitor accessibility in the construction and modernization of stations, and to participate in planning for increased wheelchair bus service. Eighty-four buses are now lift-equipped for special needs passengers.

The suburban bus program was reinstituted. Community-managed and operated programs in Natick, Needham, Bedford and Lexington again received MBTA subsidies. New suburban bus programs began in Framingham, Norwood and Dedham. The Suburban Transportation Program provides operating subsidies for local bus, minibus or shared-ride taxi services, allowing communities to implement systems responsive to their local transit needs.

The Northwest Corridor Service Study was completed. Recommendations will be implemented with the opening of the new Red Line stations during 1985. This study provides a model for future MBTA corridor study efforts. A comprehensive ridership survey was conducted and numerous public meetings and community workshops were held throughout the corridor to present and discuss service options. Data thus obtained was used to predict ridership changes.

Two-car train operation returned to the Riverside branch of the Green Line. This will not only increase passenger capacity but will allow for a more expeditious commute as there will be less congestion in the tunnels and less wear on switches.

THE RIDE

(Specialized para-transit door-to-door service for the handicapped.)

Communities Served: 1977-1984	Proposed Expansion: 1985
Arlington	Lynn
Belmont	Salem
Boston	Peabody
Brookline	Saugus
Cambridge	
Chelsea	Milton
Everett	Weymouth
Malden	Braintree
Newton	Quincy
Somerville	
Watertown	Bedford
Winthrop	Lexington
Medford	Waltham
Revere	
Square mileage covered: 125	Square mileage covered: 155

The Authority offered free service from 10:00 p.m. until an extended closing hour of 3:00 a.m. for Boston's "First Night Festival," and extra service for the annual July 4th Esplanade concert. These services were added as part of Governor Michael S. Dukakis's campaign against drunken driving.

Traffic Operations surveyed maintenance of station lighting, plastering, painting and signage, and general station upgrading; reviewed the Authority's 10,000 bus stops and began replacing missing signs, and coordinated with the City of Boston and the Metropolitan District Commission to prepare for Red Line replacement bus service during track rehabilitation in May of 1985.

AVERAGE WEEKDAY SYSTEM PASSENGER VOLUME (One-way)

	1983	1984	Increase
October	556,180	571,626	2.8%
November	551,101	563,612	2.3%
December	527,880	576,813	9.3%

The above represents data based on the results of farebox surveys conducted by the MBTA and CTPS in November of 1983 and 1984.

OPERATIONS

Safety & Training conducted 100-150 safety inspections throughout the Authority to assure compliance with safety rules and procedures. Lost time due to industrial accidents was down 26 percent from 1983.

Several training sessions for inspectors also were held, where these first-line supervisors learned about management rights, grievance avoidance and employee discipline.

The Starters and Inspectors Training Program, developed in 1983 as part of Governor Dukakis's Anti-Crime Program, expanded this year. Designed for street supervisors, the five-day agenda included control/restraint techniques, in-field training/fire prevention, front office/platform management and CPR certification. All 302 starters and inspectors have successfully completed the program.

Delivery of two work cars should be made by the spring of 1985, as part of an increased maintenance effort.

RAIL EQUIPMENT MAINTENANCE

A $52 million contract was awarded to Urban Transportation Development Corporation (UTDC, USA) for the manufacture of 58 new cars for the Red Line. These cars will allow for longer trains that will reduce passenger congestion and offer greater reliability of service. Delivery is expected to begin in the spring of 1986.

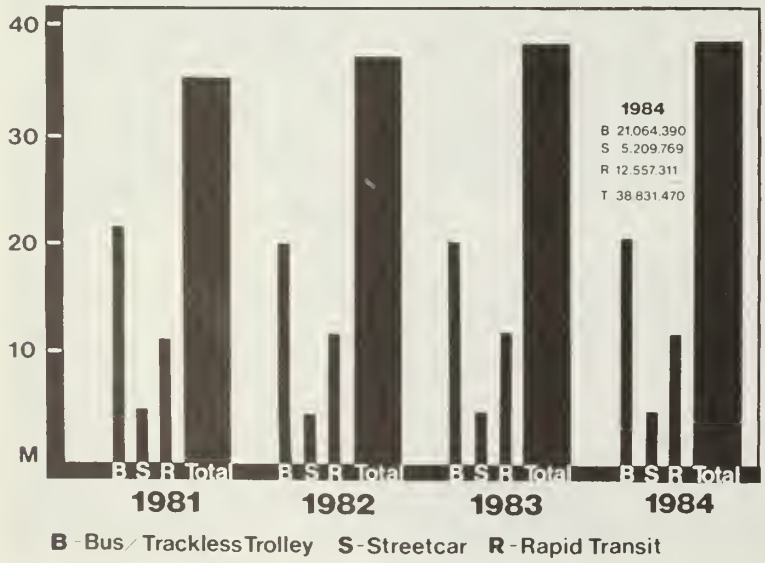
Forty-four of the older Red Line cars (so-called "Bluebirds") included in a 50-car contract were completely overhauled by the General Electric Company and returned to service. All of the work was performed at PX Engineering in South Boston.

A $35.5 million contract went to the General Electric Company for major overhaul of the 76-car Red Line "Silverbird" fleet. This program, begun in November, will overhaul major car components; install new signal equipment, seating and a variety of safety and design improvements; reinforce car floors, and restore car interiors and exteriors. When these programs are complete, all of the MBTA's 164 Red Line vehicles will have been rebuilt.

During 1984 a major recruiting program brought in 13 repairmen specialists for maintenance programs on the LRVs and 32 repairmen for the PCCs and Red, Orange and Blue lines.

Reconstruction of the Everett maintenance facilities was completed with the $35 million rehabilitation of the 50-year-old Main Repair Shop in 1984. The refurbished buildings and modernized equipment comprise the centerpiece of the Comprehensive Preventive Maintenance Program (CPMP) which will involve every carhouse used by **Rail Equipment**.

Revenue Miles By Mode



B - Bus/Trackless Trolley **S** - Streetcar **R** - Rapid Transit

A new Reservoir maintenance facility was also completed. The $11 million carhouse is a medium maintenance facility capable of handling 13 cars at a time for such corrective work as replacement of trucks, air compressors, and couplers, and repairs to brake and propulsion systems. The work included an additional $7 million upgrade of the Reservoir station with a new busway, improved special needs access, new benches, better lighting and landscaping. A new "diamond crossover" improves our ability to shift Light Rail Vehicles (LRVs) between the Riverside and Cleveland Circle branches, thereby improving flexibility to add service where it is needed and expansion of the LRV storage yard.

AUTOMOTIVE EQUIPMENT MAINTENANCE

Automotive Equipment is responsible for overall maintenance and repair of the Authority's 1,137 revenue buses and over 400 non-revenue cars, trucks, snow equipment, police vehicles and motorcycles.

The last 20 1966 GMC buses in a 70-bus rehabilitation program were overhauled and placed back in service by Coach Builders, Inc. of Springfield, Massachusetts. A new contract was awarded to Midwest Bus Rebuilders of Owosso, Michigan, for similar restoration of 80 additional buses. Work began in the fall of 1984.

In addition, over 100 Flxible and AM General buses had new safety glass installed.

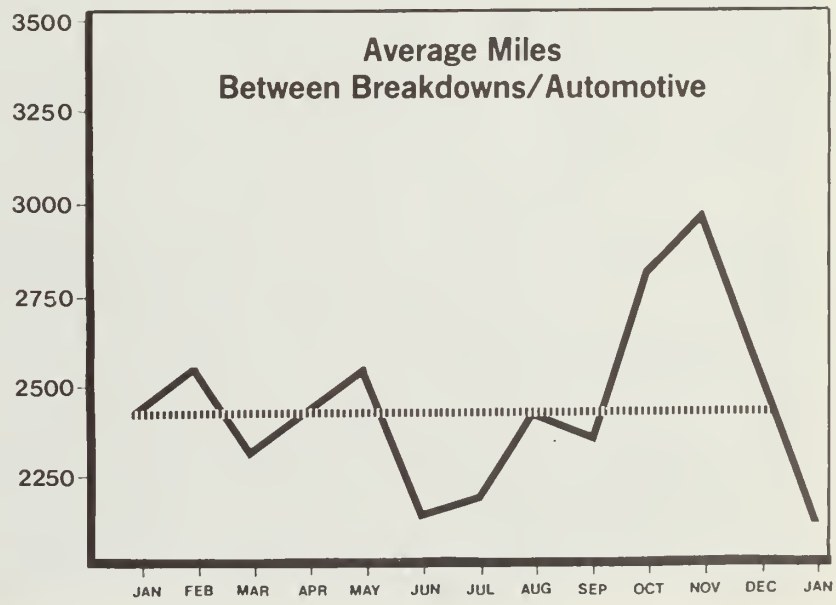
During the summer, 45 buses requiring body and frame work were refurbished and returned to service within six weeks.

Late in November, a Bus Emergency Frame Program was started to repair the body and frames of 20 buses being held out of service. As of December 31, six buses had been repaired and returned to service. The remaining buses were returned to service by the end of February, 1985.

Automotive Equipment reduced bus breakdowns by 24 percent, from 12,863 in 1983 to 9,748, through more rigid and more frequent inspections, less absenteeism and increased productivity. The number of inspections for the year was 5,554 and mean miles between inspections was 4,300. Mean miles between breakdowns ended the year at 2,450.

Mean miles between transmission failures ended the year at 111,077 miles. Transmission replacement in buses decreased to 215 units due to better preventive maintenance. Mean miles between engine failures was 197,367 and 121 engines were installed. There were 9,748 disabled buses in 1984.

In 1984 **Automotive Equipment** installed computer terminals at all seven bus garages and the main office to better monitor bus work.



OPERATIONS

ENGINEERING AND MAINTENANCE

Engineering and Maintenance completed necessary rehabilitation and repair work at 26 stations as part of its Mini-Mod Program. These stations received a fresh coat of paint; waiting benches were sanded and refinished; ceiling and wall tiles, lighting fixtures, stair treads and handrails, doors and door locks were repaired and/or replaced; new trash receptacles were installed, and station directional and informational signs were updated.

Stations remodeled in 1984 included: Green Line: Arlington, Government Center, Boylston; Orange Line: Washington, State Street; Red Line: Broadway, Washington, South Station, Park; Blue Line: State Street, Bowdoin, Maverick, Airport, Wood Island, Orient Heights, Beachmont, Revere, Wonderland; and Mattapan High Speed Line stations and Green Line Riverside stations.

The Special Track Repair Program started on July 1. By December 31, the program had installed 21,729 feet of new rail, 3,100 new cross ties, 2,306 third rail insulators, and 4,578 new tie plates; regauged 12,788 feet of third rail; anchored 25,924 feet of track, and backshimmed 9,604 feet of restraining rail.

Prior to 1971, all substations used 25HZ power, generated at the Authority's Lincoln or South Boston power plants or purchased from Boston Edison. A new 60HZ system was installed in 1984, funded by the Urban Mass Transportation Administration (UMTA) at a cost of over $55 million.

The Cable Improvement Program Phase I reached 75 percent completion. This phase involved replacement of old and worn power cables in the subways. Upon completion, these new cables will provide improved reliability.

A portion of the Green Line Arborway Branch (entering the storage yard) wasrelocated in early spring. This consisted of a new track and overhead wire system for the new Morton Street Bridge to allow for SWCP Orange Line construction in the Forest Hills area.

The Authority's major Subway Pump Room Rehabilitation program to rejuvenate deteriorating pump rooms throughout the system and replace unreliable equipment was approximately 25 percent complete by the end of 1984. Final completion is slated for March 1986.

A consultant was hired to study the reliability and maintain ability of electronic fare collection equipment. Its final report recommended a fiber optic modification and a vibration modification in controllers — those parts of the collection equipment that verify that passes are valid. These recommendations have been implemented at Northampton, Egleston and Park Street stations and are monitored on a weekly basis.

CONSTRUCTION

A $1.3 billion transit extension program brought the opening of new stations at Porter and Davis Squares on the Red Line Northwest Extension, while the Southwest Corridor Project on the Orange Line moved past the 60 percent completion mark. **Construction** responded to the North Station bridge fire in a timely fashion, completing temporary platforms for commuter rail transfers to the Orange and Green lines within a week of the event. The $2.3 billion system-wide improvements program provided station modernization, power/signal/communication improvements, track improvements, commuter rail rehabilitation and plant/facilities improvements.

With the help of **Construction's** federal grant section, the Authority obtained $172 million in capital grant awards from the U. S. Department of Transportation's Urban Mass Transportation Administration (UMTA) and $21 million in operating assistance. These funds and state-authorized bond funds allowed **Construction** to award in excess of $198 million in construction contracts in 1984, a substantial increase over the $122 million awarded in 1983.

As a result, the Authority was a major contributor to the state's construction industry and overall economy, while improving the daily commute of the riding public.

Since 1964 the MBTA has obligated over $3.6 billion towards capital improvements projects, providing thousands of construction and related jobs, and creating permanent jobs as new stations stimulate urban revitalization.

1984 CONSTRUCTION HIGHLIGHTS

Red Line Northwest Extension

The Red Line Northwest Extension—honored by five major national design and engineering awards—commenced revenue service to both the Porter Square and Davis stations. During 1984, five contracts on the Red Line Extension were awarded, with an estimated value of $6.7 million. These included a parkland along the right-of-way, roadways and trackwork at Alewife, and improvements at Porter station. The project advanced to 93 percent complete during 1984, with Alewife station scheduled to open in spring, 1985. The original project cost estimate of $619 million had been previously reduced to $586 million due largely to favorable bids in a highly competitive market.

This extension project is on schedule and within budget, and is expected to attract 22,000 new riders to the Red Line when complete and to provide over 2,000 direct construction jobs as well as 4,000 related job opportunities.

Southwest Corridor Project

The Southwest Corridor Project, the largest construction project in Massachusetts history, includes the 4.7 mile relocation of the MBTA's Orange Line from the Washington Street elevated structure through Roxbury into a depressed rail right-of-way from Boston's South End/Back Bay to Forest Hills. The new right-of-way will include Commuter Rail and Amtrak lines. In addition, nine new rapid transit stations, three of which will serve as railroad stations, are being constructed. The project also includes construction of streets, bridges, utilities and an 85-acre parkland that will stretch from the South End/Back Bay to Forest Hills and provide a link to Boston's major parks (Arnold Arboretum, Franklin Park). The project provides for the creation of numerous development parcels and is expected to serve as a catalyst for the urban revitalization of several Southwest Corridor neighborhoods.

Cutting the ribbon at Porter Square Station. Left to right, Gov. Michael S. Dukakis, General Manager James F. O'Leary, and UMTA Regional Administrator Richard H. Doyle.

CONSTRUCTION

During 1984, seven Southwest Corridor contracts, worth nearly $100 million, were awarded. These included the last of the station contracts and such project-wide elements as collectors booths, signals, escalators and ventilation. Originally estimated at $792 million, the project budget was reduced to $744 million by year-end due to favorable bids received and effective project management. In all, the total project advanced from 33 to 62 percent completion. Demolition, site preparation, excavation and line construction are nearly complete, while station construction and project-wide track, signal, communication, ventilation and escalator/elevator installation are all underway.

The project, scheduled for completion the winter of 1986-87, includes a goal of 35 percent Minority Business Enterprise participation. It is expected to produce some 18,000 jobs during the construction phase and another 12,000 permanent jobs resulting from anticipated development along the corridor, as well as a $7.3 million increase in tax revenue for Boston.

Orange Line daily ridership is projected to be 66,930 per 24-hour period upon project completion, with an additional 20,000 passengers expected to use the commuter rail and Amtrak lines.

South Station Transportation Center Project

In July, construction began on the multi-modal South Station Transportation Terminal Project, removing half the available track at South Station. A strong operations and management response kept the South service (and Amtrak, which uses the same terminal) operating without major inconvenience to commuters.

A $48.8 million contract was awarded in 1984 and provided for the renovation and rehabilitation of the terminal building and east wing, the construction of a new west wing, concourse, tracks and elevated platforms that will provide greater accessibility for special needs riders. This phase of the project will also make provisions for a new direct below-ground connection from the terminal to the Red Line. In addition, the historic station facade has been cleaned with restoration chemicals, while the brick and granite have been repointed.

The planning, design and construction of the $100 million project is a joint effort of the MBTA, UMTA, the Federal Railroad Administration and the Boston Redevelopment Authority. The complex will ultimately house a fully-enclosed train terminal, an elevated terminal for both intercity and local buses, a parking garage, and extensive prime office and retail space.

In 1984 an enclosed off-site train maintenance facility for the Boston & Maine Railroad and a bridge over the Fort Point Channel to facilitate train movements for B&M, Conrail and Amtrak from the South Station were completed.

Southwest Corridor Project

CONSTRUCTION

Commuter Rail Trestles

On January 20, fire destroyed the wood construction trestle located behind North Station, disrupting all commuter rail service to the north. By overseeing demolition, design and reconstruction efforts on an accelerated basis, **Construction** played a central role in the return of normal commuter rail service by 1985.

During 1984, **Construction** obtained funding through UMTA and awarded an $11.3 million contract for trestle rebuilding and additional North Station area improvements such as new platforms, canopies, better lighting and increased special needs rider access. By year-end, the construction contract was 80 percent complete, the B&M had commenced track installation, and restoration of service to North Station is expected in the spring of 1985.

On November 16, the trestle at the Beverly-Salem Drawbridge was also destroyed by fire, shutting down commuter rail service past Salem. By year-end a demolition contract had been awarded and design engineering had commenced for an estimated $6 million trestle reconstruction contract and $20 million in right-of-way, track, bridge and station improvements past Beverly. Completion of these construction efforts and restoration of rail service to areas beyond Salem is scheduled for late 1985.

Station Modernization

The major objective of this program is to lengthen platforms at ten older Red and Orange Line stations to accommodate six-car trains. Additional station improvements, such as new security measures and citizen talk-back radios, new escalators and elevators which will make these stations fully accessible by special needs riders, as well as renovations to station interiors and exteriors, are also included. During 1984 a $7.7 million contract for work at Kendall was awarded and underway. Approval of $22 million in federal grant funds was obtained for modernization at Central Square, Park Street and Washington Street stations. Design continued for platform lengthening at Andrew, South Station and Broadway.

Power, Signal & Communication Improvements

Under the power program, a $912,000 contract to convert the turbine at South Boston to 60HZ operation was awarded. Construction of 15 substations and associated cable systems continued. The conversion is necessary because the old 25HZ equipment has become obsolete. A consultant was engaged to study the power requirements to support operation of six-car trains on the Red Line.

The $7.5 million automation of the Red Line signal system (Columbia to Harvard), progressed beyond 90 percent completion. This is the final segment of a program to automate train operation over the entire Red Line.

Track Improvements

$8.7 million for a two-year effort to rehabilitate track in the Green Line central subway (between Boylston and North Station) and $2.8 million for improvements at the Cabot rapid transit line yards were awarded. $23 million in federal grant funds were approved to renew Red Line track from Harvard to Charles.

Plant and Facilities Improvements

Eight contracts valued at $11 million were awarded under this program, including $4 million to rehabilitate the Albany Street and Quincy bus garages, $3.4 million for six ventilation shafts along the Green Line subway, and $2.1 million for pump room rehabilitation in the subway tunnel system. In addition, the $12.5 million reconstruction of the Reservoir yard, carhouse, and signals was completed in 1984.

Program Development

During 1984 several projects moved forward:

Orange Line Replacement Transit Improvement Study — Preparation of the Alternatives Analysis and Draft Environmental Impact Statement is underway, evaluating light rail, bus and trackless trolley options. Other factors, such as cost, characteristics of the service, community preference and land requirements will also be considered as the Southwest Corridor nears completion.

North Shore Transportation Improvements Program — **Construction** completed schematic designs for modernization of the Revere Beach and Wonderland Blue Line stations, and for a joint MBTA/Lynn Parking Garage and relocation of the Salem Commuter Rail station.

Green Line Northwest Corridor — Project staff addressed issues surrounding North Station trestle reconstruction. Phase I Schematic Design report for the new/relocated Lechmere station was completed. The "Beyond Lechmere Alternatives Evaluation Report" was completed.

Transit Park-Ride Improvement Program — The MBTA's Transit Park-Ride Improvement Program has identified over 30 parking locations for improvement. In 1984 two were opened to bid for construction: Route 128 Station at Dedham and the North Quincy station east parking lot. Ten additional locations are in various stages of design. A consultant selection process was initiated to put another ten locations into design. Ⓣ

CONSTRUCTION

MBTA CONSTRUCTION CONTRACTS AWARDED

Award Date	Contract Description	Firm Name	Award Amount
2/1/84	Renovations to Albany St. bus garage, Boston	Solimando Construction Co., Inc.	$1,195,875.00
2/21/84	Furnish and install collector and starter booths, system-wide, Southwest Corridor, Boston 097-411	Kiewit Eastern Co.	1,175,000.00
2/21/84	Transit signals and communications, Southwest Corridor Project, Boston 097-404	General Railway Signal Co.	21,881,131.00
3/1/84	Track rehabilitation, Stoughton Branch, Norfolk County 099-105	J.F. White Contracting Co.	597,683.00
3/13/84	Systemwide escalators, Southwest Corridor Project, Boston 097-320	Otis Elevator Co.	2,024,500.00
3/29/84	Forest Hills station and line construction, Southwest Corridor Project, Boston 097-320	J.V. White/Morrison-Knudsen/Mergentine	36,741,027.00
3/29/84	Station modernization, platform lengthening, Cambridge Ctr./MIT	Peabody International Co.	7,680,700.00
4/9/84	Back Bay station construction, Southwest Corridor Project, Boston 097-116	The Modern Continental Construction Co.	17,137,000.00
4/24/84	South Station Intermodal Transportation Center, Phase I, Boston	J.F. White Contracting Co.	48,775,062.00
5/18/84	Right-of-way improvements, Davis Square station to Alewife station, Somerville and Cambridge 091-512	J.F. White Contracting Co.	1,474,569.00
5/18/84	Sitework and related roadwork improvements, Alewife station garage, Cambridge 091-602	J.F. White Contracting Co.	3,644,000.00
5/18/84	Conversion of combustion turbine from 25HZ to 60HZ operation, South Boston	Fischbach & Moore, Inc.	912,000.00
5/21/84	Subway tunnel ventilation shafts G-1 through G-6, Government Center	Kiewit Eastern Co.	3,358,600.00
6/1/84	Renovations to Quincy bus garage, Quincy	Solimando Construction Co.	2,789,718.00
6/5/84	Railroad platform extension, Porter Square, Cambridge and Somerville	Bonacorso Construction Co.	171,556.00

MBTA CONSTRUCTION CONTRACTS AWARDED (cont'd)

Award Date	Contract Description	Firm Name	Award Amount
6/15/84	Track and storage yard modifications, Cabot RTL Yards, Boston	J.F. White Contracting Co.	2,781,433.00
6/29/84	North Station trestle reconstruction, Boston	Kiewit Construction Co.	11,314,270.00
7/13/84	Parking area improvements, Route 128 station, Dedham	Metro Boston Contracting Co.	167,180.00
7/17/84	Red Line tunnel rehabilitation, Melville Ave., Dorchester	T Equipment Corporation	415,725.00
7/31/84	Porter Square station restoration, Cambridge	John McCourt Co.	1,062,186.00
7/31/84	System-wide trackway ventilation, Southwest Corridor Project, Boston 097-416	Fischbach & Moore, Inc.	2,979,000.00
9/28/84	Southwest Corridor Project section II, Ruggles St. station, Boston 097-213	J.F. White Contracting Co.	17,264,000.00
10/24/84	Special trackwork installation, Alewife-brook interlocking Cambridge and Arlington	J.F. White Contracting Co.	392,000.00
11/7/84	Removal of existing track Forest Hills to Needham Jct., Needham Branch	T Equipment Corporation	298,400.00
11/7/84	Track improvements, central subway, Green Line, Boston 095-105	J.F. White Contracting Co.	8,741,714.00
11/30/84	Structural repairs to elevated structure, Orange Line, Part V, Boston	N.B. Jon-son Steel Errectors, Inc.	670,541.00
12/4/84	Demolition of old heating plant, Everett Maintenance Facility, Everett Readvertisement (1)	Napoli Wrecking Co., Inc.	279.920.00
12/26/84	Demolition of bridge trestles, Beverly and Salem, Essex County	J.M. Cashman, Inc.	327,000.00
12/26/84	Pump room rehabilitation, Boston	Bay State York Co., Inc.	2,084,600.00

CONSTRUCTION

FY'84 FUNDING SOURCES SECTION 3 RAIL MODERNIZATION

PROJECT	UMTA NUMBER	FED. SHARE GRANT AMOUNT	SUBMITTAL DATE
1. Station modernization/ platform lengthening program	MA-03-0056-04	$24,921,960.00	5/25/84
2. North Station	MA-03-0116	9,171,000.00	5/21/84
3. Track improvements	MA-03-0057-05	12,750,000.00	5/25/84
4. Power improvements	MA-03-0019	4,500,000.00	5/21/84
5. Tunnel improvements	MA-03-0085	1,620,000.00	5/21/84
6. Signal/Communications	MA-03-0084	800,250.00	7/5/84
7. CRIP IV	MA-03-0111	3,521,615.00	
8. JFK/UMass	MA-03-0086	1,969,500.00	3/14/84
9. Transit Park-Ride	MA-03-0114	1,611,900.00	7/6/84
10. Lechmere	MA-03-0127	1,538,775.00	
SUB-TOTAL for FY'84 funding:		$62,405,000.00	
	BUS MODERNIZATION		
11. Plant improvement	MA-03-0078	5,010,000.00	7/5/84
	TOTAL:	$67,415,000.00	

FY'84 FUNDING SOURCES: SECTION 23, INTERSTATE TRANSFER

PROJECT	UMTA NUMBER	FED. SHARE GRANT AMOUNT	SUBMITTAL DATE
1. Red Line Northwest Amendment No. 8	MA-23-9008	$7,650,000.00	2/9/84
Amendment No. 9	MA-23-9008	3,400,000.00	5/10/84
2. Forest Hills-Needham Branch restoration	MA-23-9013	28,927,140.00	3/10/84
TOTAL for FY'84 funding:		$39,977,140.00	

FY'84 FUNDING SOURCES: SECTION 9

I. BLOCK GRANT	AMOUNT	SUBMITTAL DATE
Operating assistance	$21,338,202.00	3/28/84
Rehabilitation/purchase buses	7,603,200.00	3/28/84
Rolling stock replacements parts	4,000,000.00	3/28/84
Silverbirds upgrade *	8,960,000.00	3/28/84
Systemwide improvements	12,473,178.00	
TOTAL for FY'84 funding:	$54,374,580.00	

* Project disallowed by UMTA; funds will be reprogrammed.

COMMUTER RAIL

Commuter Rail revenue held steady in 1984 at $16.8 million and ridership decreased slightly from 1983's 11.3 million to 11.2 million passengers. Ridership on the southside, however, increased 18 percent as a result of added service to meet the demands of reconstruction of South Station and the Southeast Expressway. Despite increased cost attributed to the fires at North Station and Beverly bridges, **Commuter Rail** finished the year under budget, and maintained its high standard of on-time adjusted performance level, finishing the year at 97 percent.

In January, a fire destroyed several hundred feet of timber trestle leading to the four-track drawbridge over the Charles River, just north of North Station. Joint planning by **Commuter Rail, Operations** and the Boston and Maine Railroad provided alternatives for commuters including MBTA buses and new connections to rapid transit. MBTA shuttles brought commuters to North Station within 10 minutes of regular travel time. Repairs of the North Station trestle are to be completed by April 1985, re-opening service from the northside into Boston.

On November 16, 1984, a second fire destroyed the Beverly Drawbridge and Trestle spanning the Danvers River, affecting 2,500 daily riders from Ipswich, Beverly, North Beverly, Manchester, Gloucester and Rockport. **Commuter Rail**, together with **Operations** personnel and private carriers, arranged immediate shuttle service to circumvent the problem. On January 7, 1985, private first-class coaches replaced the shuttles, and offered a comfortable and faster route to the new Salem station.

Due to the loyalty of North Shore commuters, ridership during this period only declined 16 percent. Future losses will be reduced with continued improvement of motor coach operations along the Eastern Route and with the re-opening of the North Station. Extra efforts continue to be made to improve travel time.

Commuter Rail expanded southside service to assist commuters during the reconstruction of the Southeast Expressway. Federally-funded extra trips per day added 4,200 seats to peak-period Commuter Rail service from the southshore and service was effectively doubled on the Stoughton Branch. In 1984, ridership increased 18.3 percent.

The design and construction of right-of-way, track, signal, station and bridge improvements to various Commuter Rail lines, carried out by **Construction**, continued in 1984. Four contracts valued at $12.5 million were awarded, most notably the $11.3 million reconstruction of North Station trestle. The $1.2 million rehabilitation of the Gloucester Drawbridge was completed, as were miscellaneous station and track contracts.

A $30 million federal grant for reconstruction of the Needham Branch was obtained. Work commenced with the award of a $298,000 track removal contract, well underway by year-end.

In 1984, technical specifications were prepared by **Commuter Rail** for acquisition of new equipment. New conventional single-level coaches and locomotives, similar to the 1979 model Pullman coaches, returned to service in 1982. When the first deliveries of 34 single-level Commuter Rail coaches commence in early 1987, 18 will be assigned to the re-opened Needham Branch Line. These coaches and locomotives will substantially save fuel and reduce exhaust and noise.

Conrail's $2.7 million rehabilitation of the Framingham Terminal track was completed. Work is expected to begin shortly on a new station, platform and layover facility.

COMMUTER RAIL

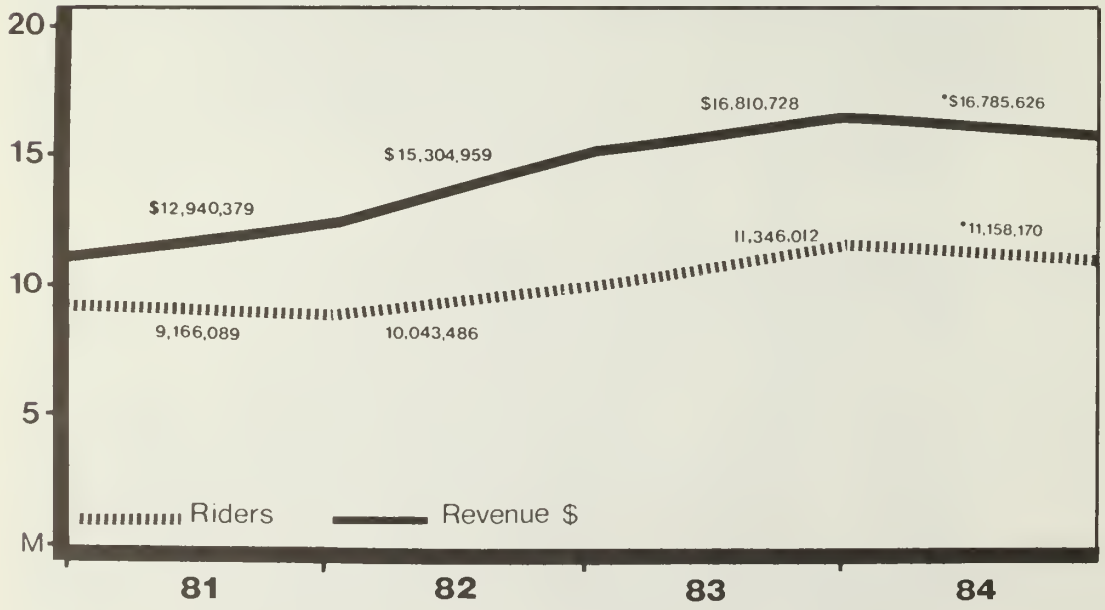
In September, the Mishawum Commuter Rail station on the New Hampshire Main Line opened. This is the first new station opening in three years and will serve the burgeoning industrial park located at Routes 128 and 93 in Woburn.

In June of 1984, the Old Colony Feasibility Study, initiated in 1983, was submitted to the Legislature. The findings of the study indicate that rehabilitation of the three branches from Boston to Scituate, Plymouth, and Middleboro is feasible, and ridership projections for 1990 are comparable to other commuter rail services on the southside of Boston.

Lowell became the first station accessible to special needs riders when the station was rehabilitated in 1984. The full-scale renovations begun at the Swampscott station were completed in 1984, and work on a special needs access ramp will start in 1986.

Expanded parking and parking lot improvements were made at Canton Junction, Canton Center, Readville, Stoughton and Route 128, adding a total of over 1,000 spaces to the collective parking facilities.

COMMUTER RAIL
Ridership and Revenue



*DECREASE DUE TO NORTH STA FIRE 1/20/84 BEVERLY FIRE 11/16/84

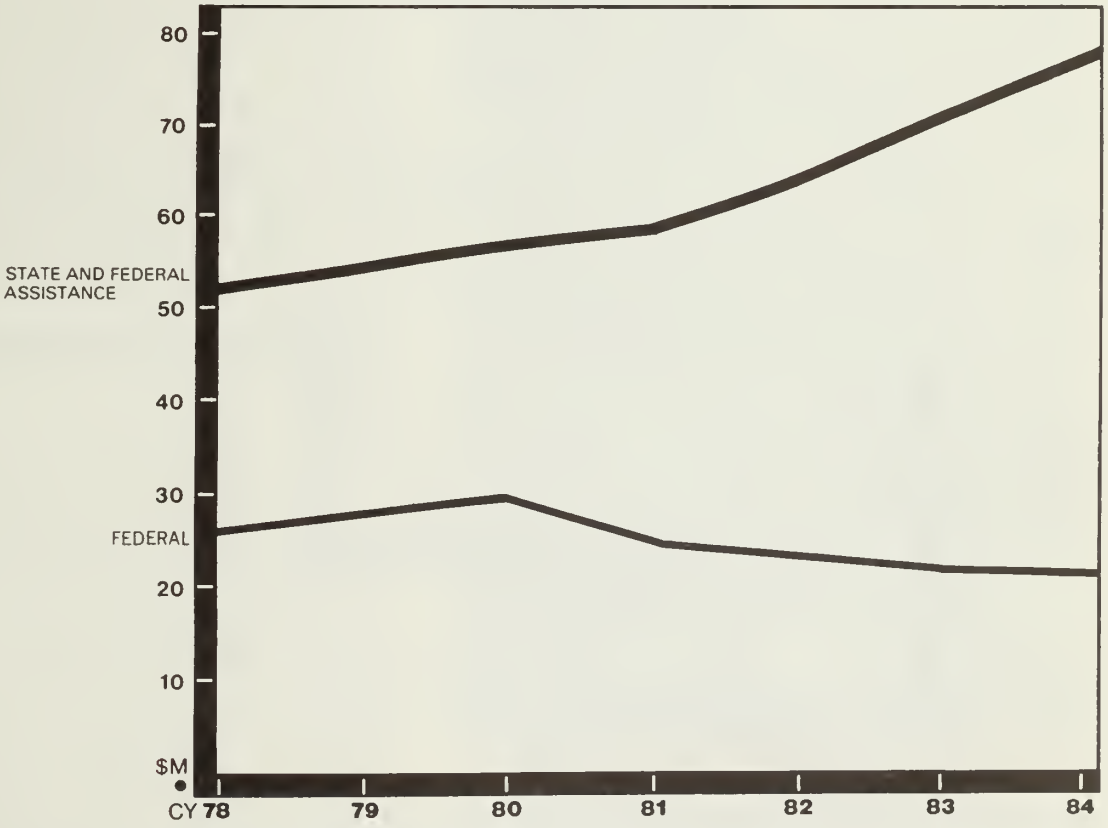
OFFICE OF BUDGET AND OPERATIONS ANALYSIS

In 1984, **Budget and Operations Analysis** implemented several creative cost-saving methods of financing, resulting in a budget surplus of $4.9 million. The surplus was used to fund preventive maintenance work. Most important of these financing tools were the Commercial Paper Program and the Variable Rate Demand Obligation. [See **Treasurer-Controller**]

It was the first year for the Authority's new budget process that uses base budgets to track spending and monitor productivity. 1984 also saw the continuation of monthly service performance standards, such as mean distribution between failure and frequency of inspections and cleaning, developed in 1983.

Budget and Operations Analysis ensured that programs were cost-effective, affordable, and consistent with priorities established by the MBTA Board of Directors.

STATE AND FEDERAL ASSISTANCE



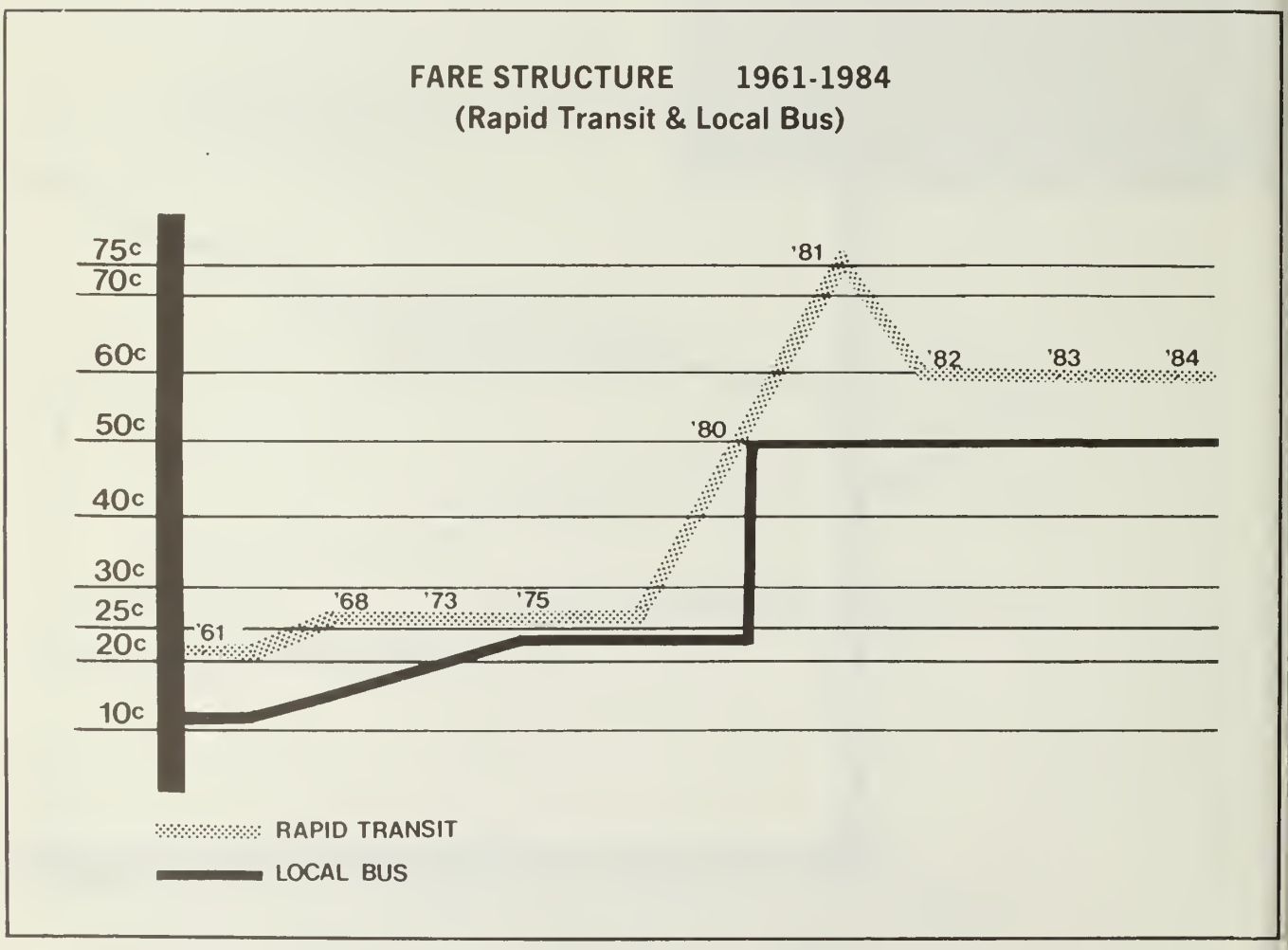
State assistance includes contribution to MBTA debt service only.

TREASURER-CONTROLLER

The MBTA has been a pioneer among transit authorities across the country in making effective use of new financing tools to produce income and save money.

In 1984, the Authority issued $90 million in bonds using the Variable Rate Demand Obligation concept. This financing method uses short-term rates to finance long-term needs. Estimated first year savings come to over $3.8 million. $70 million in commercial paper program notes were also issued. These notes have short, variable maturities, resulting in lower interest rates than the fixed-term notes they replaced. The Commercial Paper Program saved the MBTA approximately $315,000 in 1984.

Treasurer-Controller negotiated the MBTA's fourth "Safe Harbor" lease agreement, which netted approximately $630,000. Federal law permits public transit agencies to sell their local share of mass transit vehicles to private corporations and lease them back for a nominal fee. Private taxpaying corporations are interested because they are, in effect, buying the tax-deductible depreciation when they buy the cars from the MBTA. In 1984 the Authority sold the tax benefits of certain rebuilt Red Line cars, rebuilt buses, LRVs and Commuter Rail locomotives.



Thorough analysis of UMTA's Section 15/9 program resulted in an FY '85 Section 9 allocation of $67.3 million, an increase of nearly $9 million over the previous year — one of the largest increases in the country.

The Authority's letter of credit with the Urban Mass Transportation Administration was converted from the Regional Disbursing Office to the Treasury Financial Communication System. This new system enables the MBTA to receive wire transfer payments on the work day following requests for funds, six days sooner than under the old system. This has resulted in timely payments to the Authority's contractors and eliminated interest income losses on bond investments.

DEVELOPMENT AND PUBLIC AFFAIRS

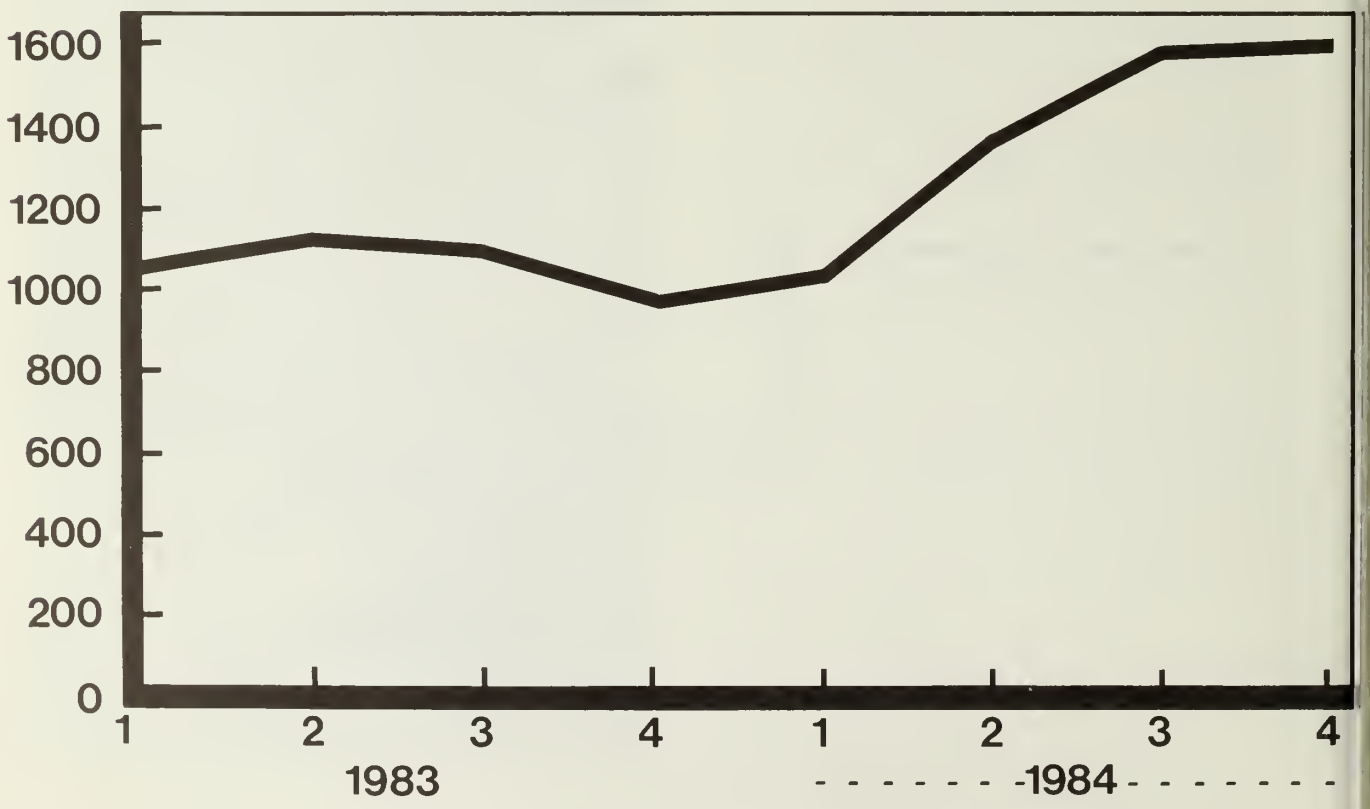
The visible growth of the Authority in 1984 — capital improvements, new projects and passenger services — and several transportation emergencies required substantial public awareness and marketing efforts by **Development and Public Affairs (DPA).**

DPA organized special events and news conferences and produced public information to highlight new Red Line and Commuter Rail stations, the station modernization program, expansion of THE RIDE program, transportation alternatives during the reconstruction of the Southeast Expressway, and emergency services in the wake of two devastating bridge fires. A day-long conference sponsored by the MBTA and the Greater Boston Chamber of Commerce was successful in encouraging more than 150 major employers to offer staggered or variable work hours to their employees.

The Pass Program, the oldest and most successful in the country, celebrated its 10th anniversary. Over one million passes were sold in 1984 — a first for the MBTA, 8.7 percent over 1983 — accounting for nearly $30 million in revenue. The 10 percent passholders' auto insurance discount was extended by the Commonwealth and, at **DPA's** request, the maximum discount was increased to $75. As part of Governor Michael S. Dukakis's program to promote tourism in Massachusetts, special passes were sold and transit information kits were distributed for the first time at the Shriners, National Conference of State Legislatures, and Fish Expo conventions.

DPA issued more than 33,000 senior citizen and special needs discount passes at the Washington Street service office and through field visits to 31 communities and seven Boston neighborhoods.

CUSTOMER INFORMATION
Average Telephone Calls per day by Quarter



The Authority's Complaint System was streamlined to provide official response within three weeks. Preparations were made to computerize complaints to help identify areas for improvement. Over 6,000 complaints and commendations were recorded during the year.

To expand public information services, the hours of the Telephone Information Center were increased 75 percent, from 6:30 a.m. until 11 p.m. weeknights and from 9 a.m. to 6 p.m. on weekends. Over 489,000 information calls were processed in 1984.

Rider, a new bi-monthly publication for passengers, the first systemwide newsletter in 10 years, was created by **DPA** to address service improvements and commuter concerns. It has a circulation of 200,000.

Real Estate Development, a new dimension of **DPA**, began operations in 1984. The objectives of this program are to generate revenue, reduce operating costs, improve facilities and increase ridership through joint development with the private sector of the MBTA properties that are determined to be appropriate for development. Projects undertaken by Real Estate Development range in complexity from a multi-million dollar mixed-use development at the Authority's Route 128 commuter rail station to rehabilitation of the Newton Centre transit station. Ⓣ

GRAND OPENING!
PORTER SQ.
STATION
RED LINE
OUTBOUND
TO ALL TRAINS →

POLICE DEPARTMENT

1984 saw the implementation of Governor Dukakis's MBTA Anti-Crime Program, which resulted in a 21 percent decrease in crime and a 57 percent increase in arrests over 1983, as well as greater coordination among police agencies. A $4 million tunnel radio system which allows direct communication between subway stations and police headquarters was installed, and both the Internal Security Unit and the Community Outreach Program (including the MBTA Crime Prevention Bus) were expanded. Under the program, 302 Chief Inspectors and Inspectors were badged as Special Railway Police.

Police added 38 new officers, bringing the total to 107, and three civilian personnel. Supervisors increased from nine to 13 (including the first female lieutenant), detectives rose from seven to 12, K-9 personnel increased from one to three and the Motorcycle Unit grew from two to nine full-time riders. A Court Prosecutor and a Deputy Chief were added, and a Juvenile Detective position and Community Service Unit were created. Minority representation increased to 19 percent and female representation increased to 10 percent, both figures the best in the state.

Police resources grew with the addition of three marked cruisers, a patrol wagon, a K-9 vehicle, a bus, five unmarked vehicles and nine motorcycles.

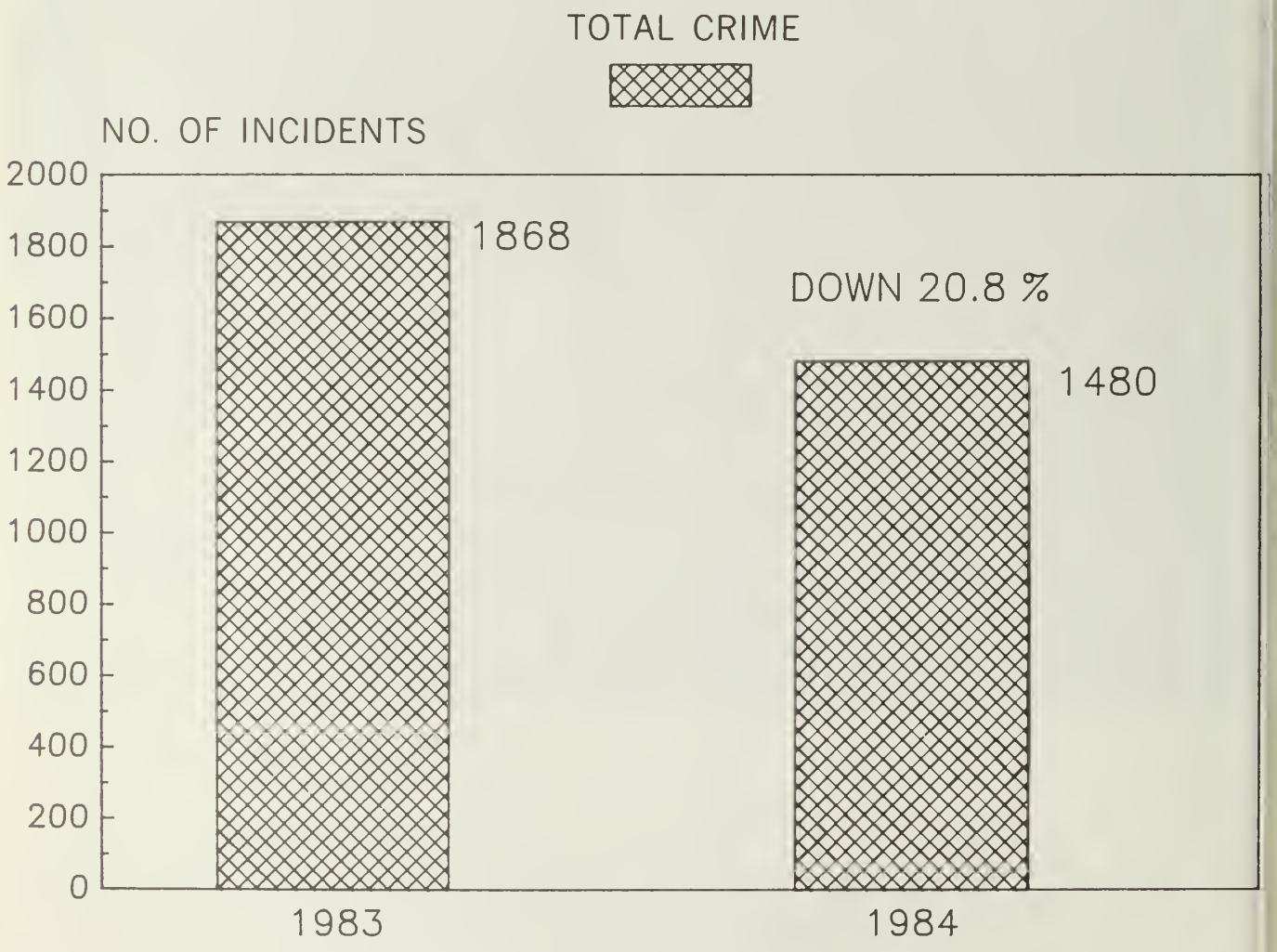
System Wide Part One* Crime Statistics

	1983	1984	Percentage Change
Homicide	2	1	-50.0
Rape	5	0	-100.0
Robbery	527	427	-18.9
Assault	355	300	-15.5
Burglary	105	84	-20.0
Larceny	797	576	-27.7
M/V Theft	77	92	+19.5
TOTAL	1,868	1,480	-20.8%

*Part One Crime Statistics refer to those serious crimes which affect people and/or their property, as defined by the Federal Bureau of Investigation (F.B.I.).

Police's restructured Internal Security Unit conducted a major investigation of the Authority's revenue collection process, resulting in significant security improvements. A probe of the Authority's parking lot vendors resulted in criminal indictments against one firm, and the replacement of two other companies for managerial improprieties. Ⓣ

SYSTEM WIDE PART ONE CRIME STATISTICS



PERSONNEL

During 1984, **Personnel** introduced a Mid-Point Evaluation System to evaluate new employees mid-way through their probationary period. This system assesses the employees's performance and makes recommendations/suggestions for further training and improved performance.

The recommendations of a six-month subcommittee of the Board of Directors, examining policies and procedures with regard to hiring, recruitment, and promotion, were accepted and adopted by the Board of Directors. The subcommittee's study further resulted in the implementation of four new programs in **Personnel**. [See **Equal Employment Opportunity/ Affirmative Action**]

New Hire Orientation Program sessions are conducted on a monthly basis to help new employees learn overall goals of the Authority, its services and benefits. A question/answer forum is also provided for the participants.

A Comprehensive Training Program was developed based on a needs assessment of Authority employees and managers. Questionnaires were distributed to all employees to update information concerning training, background and skills for use with the computerized file system and to identify areas for further training that could lead to better job performance or promotion.

Through the Comprehensive Training Program for employees, questionnaires were distributed to all employees to update information concerning training, background, and skills for use with the computerized file system. A random sampling of Authority employees received the Training and Development Needs Assessment Survey to identify areas for further training that could lead to better job performance or promotion.

PERSONNEL

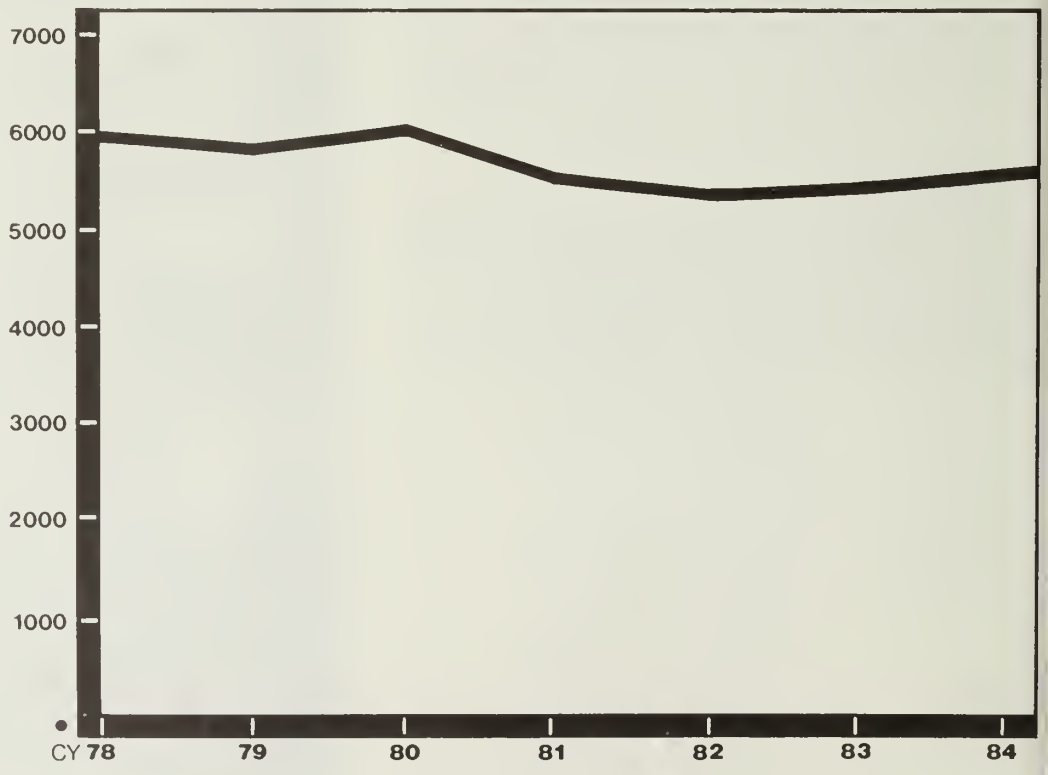
The Human Resource Information System will provide detailed work histories and other pertinent information for all employees.

And finally, the consulting firm of Arthur Young and Co. began an Authority-wide Position and Wage Classification Study to develop accurate descriptions for each job.

Participation in the Authority's ongoing Educational Assistance Program increased 37 percent during the year. The bulk of this increase was in training requests from rank and file employees for courses to enhance their skills and provide career mobility.

The Employee Services Unit continued in-house and referral services for troubled employees. In 1984 there were 5,475 employee visits and 176 new clients. Counselors attend briefings and orientation sessions throughout the year to alert employees about the services available. Ⓣ

MANPOWER (OPERATING)



EQUAL EMPLOYMENT OPPORTUNITY/ AFFIRMATIVE ACTION

As a result of **Equal Employment Opportunity/Affirmative Action (EEO/AA)** efforts in construction, the purchase of supplies and equipment, and professional services, the MBTA ranked first in the nation for fiscal year 1984 in total federal funds awarded to Disadvantaged Business Enterprises (DBE), and second in total dollars awarded to Women-owned Business Enterprises (WBE). The combined total of these funds was over $49 million.

Over $33.6 million in construction funds was awarded to Disadvantaged and Women-owned Business Enterprises during the year, more than twice the amount of the previous year's awards. These DBE and WBE awards represented 14.6 percent and 3.5 percent respectively of the total construction costs for the calendar year.

Following a six-month study by a subcommittee of the Board of Directors convened to study affirmative action policies and procedures at the Authority, the MBTA, on June 19, 1984, adopted a far-reaching affirmative action program containing more than 65 new recommendations for internal recruiting, training and promoting employees. Special emphasis was placed on monitoring of external contractors for compliance with affirmative action goals, including sanctions to be imposed on contractors not in compliance with a ten percent DBE goal and a one percent WBE goal for purchase of supplies and equipment, professional services and construction contracts. The number of minority-owned and women-owned businesses with MBTA contracts was 205 and 136 respectively in fiscal year 1984.

Internally, **EEO/AA** continued its efforts to successfully recruit, employ, train and advance minority and female workers, and to prevent discrimination due to race, color, creed, sex, national origin or age. The minority male population increased to 15.5 percent of the total workforce and female workers grew to 13.1 percent of the total workforce in 1984.

EEO/AA will continue to expand Authority training programs for minority and female employees; examine discipline practices to ensure greater equity, and increase staff presence on construction sites to monitor compliance with Authority goals. Of seven discrimination cases filed during the year, two are pending, five were resolved.

In every case, the MBTA met or surpassed manpower utilization goals (percentages of minority building trades employees set by a state formula that reflects the demographics of the construction site). On the Southwest Corridor Project alone, the manpower utilization figure was 35 percent minority.

EQUAL EMPLOYMENT OPPORTUNITY/ AFFIRMATIVE ACTION

FISCAL YEAR 1984 TOTAL FUNDS TO DBE

TRANSIT SYSTEM

Massachusetts Bay Transportation Authority, Boston	$42,258,766
New York City Transit Authority, Brooklyn	$36,845,458
Southern California Rapid Transit District, Los Angeles	$22,055,404
Washington Metropolitan Area Transit Authority, Washington, D.C.	$21,717,009
Southeastern Michigan Transportation Authority, Detroit	$14,196,339

FISCAL YEAR 1984 TOTAL FUNDS TO WBE

TRANSIT SYSTEM

New York City Transit Authority, Brooklyn	$14,968,848
Massachusetts Bay Transportation Authority, Boston	$ 7,142,981
Tri-County Metropolitan Transit District, Portland	$ 5,318,978
Southern California Rapid Transit District, Los Angeles	$ 4,582,945
Metropolitan Transportation Authority, New York	$ 3,978,227

MATERIALS DIRECTORATE

Over a seven-month period, **Materials** developed guidelines for "competitive negotiations" in which design and technical quality as well as price are factored into contract decisions for purchase of rolling stock. Other transit authorities are expected to follow the MBTA's lead in this area.

Materials administered contracts for modernizing the rail fleet, including a contract with the Urban Transportation Development Corporation for procurement of 58 Red Line cars to begin delivery in the spring of 1986 and a $35.4 million contract with General Electric for rehabilitation of the 75-car "Silverbird" fleet.

Materials also monitored the contract for 50 articulated Green Line Surface Rail cars. These cars are being manufactured by Kinki Sharyo of Japan.

A contract to rehabilitate 80 used GMC buses was awarded to Midwest Bus Rebuilders of Owosso, Michigan, at an average cost of $64,300 per bus. This saves approximately 133 percent over the cost of purchasing new equipment.

Other purchases included special trackwork, rail and ties for reconstruction of the central subway; computer equipment and software to enhance **MIS** capabilities; combustion turbine frequency conversion equipment; eight utility body trucks, five fork lift trucks, two boom trucks, 19 automobiles, an aluminum tank truck, a rough excavator and switch machine layouts, and ten trucks and related parts to increase Red Line availability.

A Buyer/MBE Coordinator was added to develop opportunities for socially and economically disadvantaged individuals to supply Authority goods and services. A Supervisor of Incoming Inspection began to administer inspections and quality assurance efforts, and a Defective Materials Committee investigated the flow of inferior goods returned for credit or replacement. Furthermore, quality assurance programs were initiated to develop alternate sources, incoming inspection requirements, field testing and new vendor approvals.

LABOR RELATIONS AND WORKER'S COMPENSATION

Labor Relations Section

During 1984, **Labor Relations** continued efforts, through negotiations and interest arbitrations, to apply the 1983 Healy Award to unions without contracts at year's end. The Healy Arbitration Award of January 15, 1983 established wages and terms of employment for Local Division 589, the Authority's largest union, and similar provisions were negotiated with most of the remaining unions. These terms include a wage freeze of at least one year, followed by 20.5 per cent in wage increases compounded over a 51-month period (approximately 4.8 per cent per year); part-time employees or lower, entry-level positions were created for the first time, and elimination of several costly and outdated work rules, including the "past practice" clause. In addition to setting wage scale, the Healy Award placed restrictions on the number of part-time employees the Authority was permitted to hire, limiting them to 15 percent of the number of full-time employees. In July, the MBTA appealed to the Massachusetts Supreme Judicial Court, the state's highest, which overturned these restrictions stating that the arbitrator had exceeded his authority in attempting to limit MBTA ability to hire part-time workers.

An agreement with the MBTA Inspectors Association, entered into in 1984, provides for basic wage increases of the Healy Award and a new formula that requires on-the-job experience as an Inspector or Chief Inspector before advancement within these positions.

Interest arbitrations were held with the Metropolitan Building Trades Council, the Towermen and Local 105 Engineers. In the Building Trades case, a landmark decision reversed the 40-year practice of pegging salaries to private sector wage standards. The old method set salaries at 91 percent of the prevailing wage. An arbitrator found that "sufficient differences" existed between MBTA building trades employees and private sector building trades employees to legitimately differentiate between them. This has provided stability and predictability in the Authority's budget process and will result in annual savings of over $2 million.

The Authority was also successful in having the Healy award applied in the Towerman's case. The Arbitrator also awarded the Authority's proposal for full acceptance of the MBTA Affirmative Action/Equal Employment Opportunity Plan.

The Local 105 interest arbitration was completed after 10 days of hearings in 1984. This award also followed the Healy Award, rejecting this union's claim for higher wage adjustments than received by other MBTA employees.

LABOR RELATIONS AND WORKER'S COMPENSATION

Out of 27 grievance arbitrations, **Labor Relations** obtained favorable results in 18 cases. Many challenges to management rights under Chapter 581 were rejected by arbitrators. These decisions helped decrease grievances involving management rights issues, such as overtime, assignment, promotion and subcontracting.

Contract negotiations commenced with Local 589 for a successor agreement to commence on April 1, 1985. Negotiations were also conducted with the Alliance of MBTA Unions which, although moved to arbitration by the Union, are nearing settlement.

Several sessions were conducted with management officials, consultants and Local 589 representatives on the scheduling of part-time operators. After a favorable decision from the courts, which eliminated the 15 percent cap and other restrictions on the use of part-time operators, schedule changes provided a more cost-efficient deployment of these employees.

In addition to the specific events listed above, **Labor Relations** has continued to advise management officials on the implementation of management rights, work rule changes and matters involving employee discipline.

The number of unions was also reduced from 30 to 26. Thirteen of those 26 comprise a single bargaining unit, reducing the total number of collective bargaining agreements to 14.

Worker's Compensation Section

A Light Duty Program for returning employees who had improved medically and could work in sedentary or semi-sedentary classifications, began in the spring of 1984. This program helps rehabilitate injured employees by placing them in interim jobs until they can return to their regular positions. It also keeps down costs of Worker's Compensation at the Authority.

The improvement of claims-handling, together with the reduction in costs obtained by the Light Duty Program, have reduced the average number of man-hours lost due to industrial accidents by 12 percent from the 7,722 average per year in 1983. In addition, total days lost due to industrial accidents fell from an average 10.2 days per person in 1983 to 8.4 days in 1984.

The compensation payroll for 1984 was $4 million, a decrease of 12.7 percent from 1983's $4.5 million, despite benefit increases of six percent in 1984 (from $320.29 to $341.06 per week).

Recovery of expenditures above self-insurer's retention resulted in receipts totalling some $763,000 in 1984.

Set forth below are claims filed since 1977, reflecting the legislatively-mandated escalation in weekly compensation benefits for the same period:

Claims for 1984 are approximately four percent fewer than for 1983 and at their lowest level in eight years.

Weekly Benefits

Year	Number of Claims	(Jan)	(Oct)
1977	2,376	$140.00	$150.00
1978	2,413	150.00	211.37
1979	2,395	211.37	227.31
1980	2,464	227.31	245.48
1981	2,543	245.48	269.93
1982	2,512	269.93	297.85
1983	2,291	297.85	320.29
1984	2,201	320.29	341.06

LAW DEPARTMENT

Providing continued support for the various Directorates as well as prosecuting and defending litigation accounts comprised much of **Law's** activities in 1984. Employment and labor relations litigation continued to be the bulk of the in-court litigation along with the usual high volume of court cases.

Management Rights continued to be challenged and the decision rendered by the Supreme Judicial Court in Local 589, ATU v. MBTA, upheld the decision of the Superior Court which overturned an arbitration award limiting the MBTA's inherent management right to hire, assign, and lay off part-time employees. The MBTA continued to pursue aggressively its remedies against the employees arrested in the Money Room. The decision of MBTA v. Retirement Board, which allows the payment of pension benefits to the arrested employees, is currently on appeal.

Court litigation increasingly put further time and money demands on the Authority. The Supreme Judicial Court decision in Mirageas v. MBTA, upholding the award of 2.8 million dollars to an injured 13-year-old, is evidence of juries' willingness to award ever increasing sums and the court's reluctance to set aside such verdicts. The MBTA is committed to aggressive pursuit of a legislative cap on jury awards.

In 1984, the Authority received over 3,400 new claims and suits for property damage and personal injury and settled over 1,800 such claims and suits for a cost of approximately $9.9 million.

2 YEAR COMPARISON: SUITS AND CLAIMS ACTIVITY

	1983 12 months	1984 12 months
Claims Settled	1,482	1,437
Cost of Claims	$907,410	$1,034,334
New Lawsuits	465	531
Lawsuits Settled and Paid	358	375
Cost of Lawsuits	$3,122,284	$8,908,640
Average Cost	$8,721	$23,756
Average Cost/Case Suits and Claims	$2,200	$5,487

REAL ESTATE MANAGEMENT

Bid specification for parking facilities have been revised by **Real Estate** to provide improved security, maintenance and cleanliness, daily Authority overview of operations and accountability at all facilities. Oak Grove, Malden Center, Wellington and Alewife garage facilities were all rebid under those new specifications.

The sale, lease and other use of Authority property in 1984 generated approximately $4.9 million, a 17 percent increase over 1983 revenues of $4.2 million.

In conjunction with the Newton Highlands Community Development Corporation, **Real Estate** secured funding for restoration of the Newton Highlands station. A grant of $20,000 was awarded by the Massachusetts Historical Commission for the project.

Real Estate's Right of Way Division negotiated numerous property right acquisitions for the platform extension program and acquired several sites for expanded commuter rail parking.

Real Estate processed several property dispositions in railroad rights-of-way to the Metropolitan District Commission for construction of water and sewer facilities.

MANAGEMENT INFORMATION SYSTEMS

MIS was established in 1982 to identify and coordinate the Authority-wide information resource needs and to determine the improvements possible through modern data processing. Over time **MIS** will transcend department-level data files, creating in their place a centralized Authority-wide computerized database accessible through a network of video data terminals. This arrangement will provide line and headquarters personnel instantaneous access to more extensive, accurate and timely information to assist in the planning and control of daily operations.

In 1984, the focus of **MIS** activity remained to add new systems to support **Operations.** A Track Repair Monitoring System, a Vehicle Failure-In-Service System and a Vehicle Availability System were installed and the data communications network was extended to each of the bus garages, providing access via data terminals to the interim Vehicle Maintenance System. Enhancements were made to the Throughput System, which provides video display via data terminals for the monitoring of rapid transit and light rail schedule performance; to the Transportation Scheduling System to help provide schedule makers updates and produce computerized schedules and timetables. To assist **Operations** in its administrative responsibilities, an automated Budget System was developed.

The **MIS** efforts underway for the two other line organizations, **Construction** and **Commuter Rail**, continued. Several of the outstanding modules representing the balance of the very extensive computerized Contract Schedule Control System installed in 1980 for control over the Authority's $200 million to $300 million annual Capital Program were completed. **Commuter Rail** received improved information exchange with the railroad's facility manager, Boston and Maine, through installation of B&M's new financial and inventory system.

The more notable Management Information Systems for the Authority's other directorates provide **Police** with a better indication of high crime incident areas and scheduling of the police patrols; provide authorized access via data terminals to employment, medical, skill, benefits, union, education, license and training information; strengthen the vendor certification and tracking process for Minority/Women Business Enterprise (MBE/WBE); and enchance the **Materials** system through computerized inventory stock and reentry documents.

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COMPREHENSIVE PROGRAM FOR MASS TRANSPORTATION

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COMPREHENSIVE PROGRAM FOR MASS TRANSPORTATION

The MBTA must comply with planning and programming requirements established by State and Federal Law.

At the state level, the Executive Office of Transportation and Construction (EOTC) is responsible for the Comprehensive Program for Mass Transportation in accordance with Chapter 161A, Section 5 (g) and (h) of the General Laws of the Commonwealth, as amended by Section 7 of Chapter 1140, Acts of 1973.

The statute states that the Authority's capital investment program and plans for mass transportation "shall be developed in consultation and cooperation with the Authority, and in consultation with the Executive Office of Communities and Development, the Metropolitan Area Planning Council, and such other agencies of the Commonwealth or the Federal Government as may be concerned with said programs and plans." The program and any revisions are subject to the approval of the Advisory Board.

The program must include a long-range plan for the construction, reconstruction, or alteration of mass transportation facilities within the Authority's district; a schedule for the implementation of the program, and comprehensive financial estimates of cost and revenues.

The current Program for Mass Transportation remains that approved by the Advisory Board on December 21, 1978.

To comply with federal requirements, the MBTA, as one of the six agencies constituting the Metropolitan Planning Organization (MPO), cooperated with those other agencies in the preparation of several required certification documents: the Unified Planning Work Program, the Transportation Plan, and the Transportation Improvement Program. All of these documents were revised and approved by the MPO during 1984.

LEGISLATION

The following statute affecting the Authority was enacted during the 1984 session of the General Court:

CHAPTER 433 — An Act authorizing the taking of certain interests in land under Boston Common by the Massachusetts Bay Transportation Authority.

With the Board of Directors's approval, the following legislation was filed for consideration by the 1985 session of the General Court:

1. An Act relative to the hiring for certain positions by the Massachusetts Bay Transportation Authority.

   (This legislation would prohibit the Authority from hiring certain persons as operators, collectors or guards and would allow the Authority to receive criminal offender information [criminal records].)

2. An Act establishing a claims and indemnity procedure for the Massachusetts Bay Transportation Authority and the officers and employees thereof.

   (This proposal would impose a one hundred thousand dollar limit on certain claims against the Authority. This same limitation is now applicable to the Commonwealth and cities and towns under legislation enacted in 1978.)

3. An Act relative to income tax credits for employees providing all or part of certain expenses to public transportation.

   (This proposal would authorize a tax credit for an employee who subsidizes, in whole or part, prepaid transit passes or commuter rail tickets. The bill provides for a 50% credit.)

4. An Act relative to the transfer of all vehicular bridges carrying public ways over tracks or rights-of-way of railroads within the Commonwealth.

   (This proposal provides that the D.P.W. take over the care and ownership of vehicular bridges now owned by the Authority. Current law enables the D.P.W. to take over care and control of railroad bridges.)

5. An Act relative to public ways over tracks or rights-of-way of railroads within the Commonwealth.

   (This would relieve the Authority from flagging costs when the D.P.W. is working on bridges that pass over M.B.T.A. commuter rail rights-of-way.)

6. An Act amending the law relative to the use and occupation of certain land in the city of Cambridge by the Massachusetts Bay Transportation Authority.

   (This proposal would extend occupancy of land at Bennett Street by the Authority.)

7. An Act relative to the payment of fuel and special fuel excises by the Massachusetts Bay Transportation Authority.

   (This legislation seeks an exemption from the payment of excises for fuel and special fuels consumed in the operation of Authority vehicles. Under current law the Authority pays such excises and is reimbursed about 80% of the amount paid.)

8. An Act providing for reduced electric power costs for the Massachusetts Bay Transportation Authority.

   (This proposed legislation would provide options to the Authority in obtaining the most economic source of power.)

9. An Act relative to power plants and substations of the Massachusetts Bay Transportation Authority.

   (This proposal would repeal the so-called "Power Bill" enacted in 1966 in order to develop some of the MBTA power stations.)

10. An Act authorizing the Division of Capital Planning and Operations to convey to the Massachusetts Bay Transportation Authority certain land in the city of Somerville for the construction of a bridge for eastern route commuter rail over the Mystic River.

    (This legislation provides the Authority with land and easements for the construction of a high level bridge over the Mystic River for eastern route commuter rail.)

11. An Act amending the law relative to the use and occupation of certain land in the city of Cambridge by the Massachusetts Bay Transportation Authority.

    (Chapter 298 of the Acts of 1976 requires the MBTA to vacate parcel 1B of the former Eliot-Bennett Street yards by a certain date and imposes a certain rent to be paid by the Authority for parcel 1B. This legislation, if adopted, would delete the rental requirement.) Ⓣ

THE PUBLIC TRANSPORTATION DEFICIT: A BRIEF HISTORY

Since July 1, 1918, public policy in Massachusetts has incorporated the belief that the transportation network in Greater Boston is a public service, benefitting individuals, businesses and government. That policy was first implemented when five public trustees began operating the Boston Elevated Railway (BERY) under the lease conditions of the Public Control Act passed by legislature on May 22, 1918.

The BERY was originally a privately owned company incorporated in 1894 to construct the Tremont Street Subway. By 1897, the BERY was operating almost the entire Boston transit system. Within a few years, the BERY had become beset by financial problems and in 1912 the company reported its first deficit: $492,000. Again, in 1913, the company reported a deficit of $496,000. Small surpluses were realized over the next three years but in 1917 a loss of $118,000 was recorded. In the first half of 1918, losses amounted to $572,000. That year, the Legislature passed the Public Control Act placing the BERY under public control. Deficit for the first 12 months of the public takeover escalated to $3.1 million primarily due to maintenance that had been deferred pending passage of the Act.

In 57 of the 65 years since the 1918 Public Control Act, public transportation has incurred a deficit. The eight years of surplus were 1922, 1923, 1925, 1927, 1928, 1929, 1942 and 1943.The surplus was never more than $1.9 million. The Metropolitan Transit Authority (MTA), comprising 14 cities and towns, ran the system from 1948 through August 3, 1964. It had deficits, ranging from $2.8 million to $21 million, assessable on the communities. The Massachusetts Bay Transportation Authority (MBTA), comprising 78 cities and towns, is the successor to the MTA. Its net cost of service is apportioned between the 78 member communities and the rest of the Commonwealth.

Rising operating expenses, especially wage and fuel costs, are directly attributable to inflation. The spiralling costs continue to far outdistance revenue from fares paid by increased numbers of passengers.

The sources of funding for public transit, passenger revenue, local taxation, and state aid were expanded to include the Federal Government with the passage of the Urban Mass Transportation Act of 1974 as amended by the Surface Transportation Assistance Act of 1978 and the most recent Federal Public Transportation Act of 1982. These Acts enable the Authority to become eligible for assistance in both the funding of the systemwide operation and Commuter Rail.

WHERE THE RIDERS ARE

Revenue from transportation— the rider's fare — pays for about one-fourth of the operating costs of the Massachusetts Bay Transportation Authority.

The tables below show the revenue from the various types of transportation the MBTA operates on the surface and on rails. Revenue to Commuter Rail is not included in the MBTA total Transportation Revenues because this MBTA service is operated by the Boston and Maine Corporation and these revenues are included as a reduction in the railroad contract costs. The streetcar and bus revenue figures from each "rating station" — the garage where bus and streetcar operators pick their routes on the basis of their seniority rating — give a further breakdown of where people use public transportation. Ⓣ

WHERE THE RIDERS ARE

1984 Revenue from Transportation

Rapid Transit	
Orange Line	$13,974,436.00
Blue Line	3,480,271.00
Red Line (Harvard-Ashmont)	12,581,426.00
Red Line (South Shore Extension)	5,216,117.00
Green Line Central Subway	17,859,040.00
Total Rapid Transit Lines	53,111,290.00
Surface Lines	
Streetcar	9,605,903.00
Trackless Trolley	1,115,374.00
Bus	36,239,067.00
Total Surface Lines	46,960,344.00
Miscellaneous	
Student Pass Sales	937,270.00
Chartered Bus	12,304.00
Total Miscellaneous	949,574.00
TOTAL REVENUE	101,021,208.00

Streetcar Revenue by Rating Station	
Reservoir-Riverside	8,351,917.00
Arborway-Mattapan	1,253,986.00
TOTAL STREETCAR REVENUE	9,605,903.00
Bus Schedule by Rating Station	
Cabot-Albany, Boston	12,506,405.00
Arborway, Boston	5,335,231.00
Somerville and Arlington Heights	4,683,203.00
Salem St., Medford - Charlestown	7,023,212.00
Lynn	3,823,895.00
Quincy	2,813,121.00
TOTAL BUS REVENUE	36,239,067.00

MBTA ASSESSMENT PROCEDURES

A question frequently heard from our customers is "how is my town's MBTA assessment determined?" All 78 cities and towns in the MBTA district pay a share of the MBTA's yearly deficit or net cost of service. The assessment formulas for sharing the deficit were originally spelled out in state legislation passed in 1964 when the old MTA district, serving 14 cities and towns, was enlarged to the present regional transportation district and renamed the MBTA. The formulas have been amended by the legislature from time to time in an effort to make the assessment more fair and equitable.

The legislation defines two basic types of MBTA service, "express service" and "local service." Express service refers to rapid transit service on controlled rights-of-way, while local service refers to MBTA buses, trackless trolleys and streetcars in local streets. The net cost of providing each of these types of service is calculated separately and allocated by a different formula.

Express Service

Legislation has divided the assessment for the cost of express service into two parts, a 75% portion, and a 25% portion, each distributed in a different fashion.

The 75% portion of the net cost of express service is shared by all 78 cities and towns in the MBTA, based on the number of "commuters" living in each municipality. The number of commuters in each city and town was determined from the 1970 Federal Census data and included all people who traveled outside their town to their place of work, whether they used public transportation or not. In the case of the City of Boston, the number of commuters was established so that Boston would be responsible for not less than 30% of this 75% portion.

The remaining 25% of the net cost of express service is shared only by those cities and towns that have one or more express service stations. This part of the assessment is proportional to the number of passengers boarding the rapid transit and railroad lines at stations in each community. By law, counts are taken to determine the number of passengers boarding at each station and within each town, no less frequently than every two years. However, in 1973, the legislature amended the assessment procedure to exclude from the boarding counts passengers boarding at new rapid transit stations opened after July, 1973. This amendment means that a new station in a community will not result in an increase in its assessment for the 25% portion of express service costs.

Local Service

Local service refers to buses, trackless trolleys, and streetcars operating on local streets. As in express service, the formula for assigning the local service deficit is divided into two parts, each of 50% portions. Half of the local service deficit is allocated on the basis of population as determined by the most recent Federal Census (1980); on the weight of 14 cities and towns and 64 cities and towns independently. The other 50% is shared by those cities and towns that have

Type of Service	Portion of Deficit	Who Pays	Basis of Assessment
EXPRESS	75%	all cities and towns	number of commuters (1970 U.S. Census)
	25%	cities & towns with rapid transit and R.R.	boarding counts (except new stations)
LOCAL	50%	64 cities & towns	population (1980 preliminary U.S. Census)
	50%	cities & towns with bus service	share of losses sustained locally

such service and is based on the proportion of losses incurred in each city or town.

To determine the operating loss incurred in each community, costs are first identified with a mode of service — bus, trackless trolley and streetcar. All direct costs are identified directly with the appropriate mode, and indirect costs are allocated to modes largely based upon the direct charges to each mode each month. Costs by mode are then allocated to specific routes by means of one of six bases depending upon the type of expense involved. Direct costs of operations and maintenance of each rating station (depot) are allocated only to routes emanating from the rating station. For example, costs of operating and maintaining routes from the Quincy Garage are allocated only to the routes in the Quincy Rating Station.

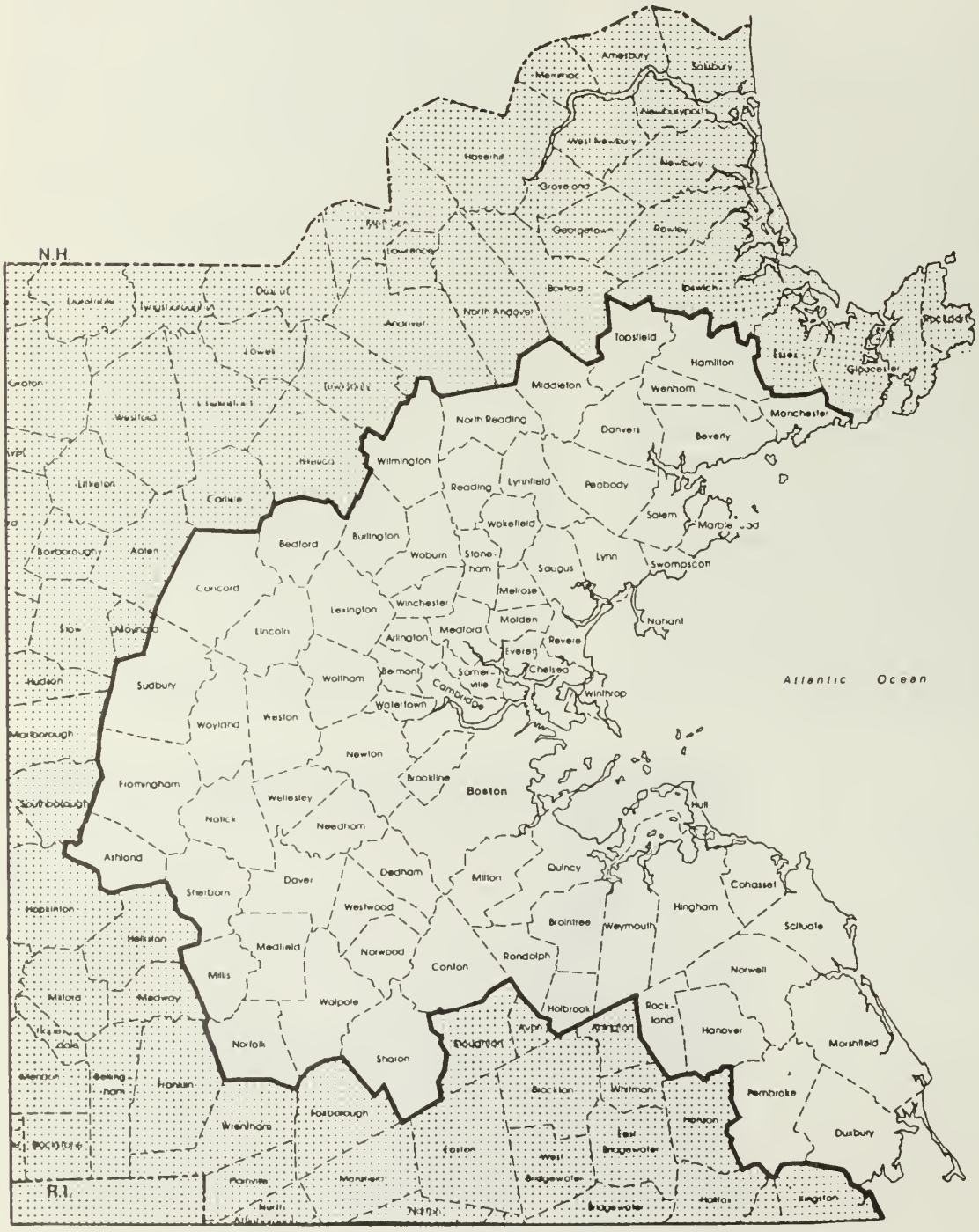
Farebox revenue is sampled on each route four times yearly, and the difference between operating cost and annual revenue determines the yearly profit or loss for each route. This profit or loss is allocated to each city or town on the route. If a town elects to have no local service, buses then make no stops in that town, and the profit or loss from routes passing through that town is distributed among the other towns on the route. For all cities or towns with local MBTA service, the losses and profits from the routes in the community are totalled. Half of the MBTA's local service assessment is then based on the percentage of local service operating losses incurred in each municipality.

As an example of total service assessment, consider a six-mile long bus route, with four miles in Town A and two miles in Town B. Assume that the operating cost from the route was $100,000 a year. Assume also that farebox revenue on the route was $40,000 a year. The operating deficit would be $60,000 a year, the difference between operating cost and revenue. Half of this $60,000 deficit ($30,000) would be allocated among the 14 cities and towns and the 64 cities and towns on the basis of population, and half would be allocated to Towns A and B. Town A would have to pay $20,000 and Town B would be assessed $10,000 because the bus route operated twice as many miles in Town A as in Town B.

Objectives

The MBTA assessment procedures can be summed up by pointing out two objectives in the formulas. The first objective is to recognize that the cities and towns of the MBTA district comprise one regional transportation district, that all municipalities benefit by the system, and therefore, all must share some of the deficit. The second objective is to assess properly that portion of the assessment to those cities and towns that are receiving a greater degree of service. To relieve the burden on local government, the state began, in 1973, to pay for part of the MBTA deficit. This state portion has increased because of the passage of Proposition 2½. The federal government is also providing operating subsidies for mass transit under legislation enacted in 1974, as amended. Ⓣ

MBTA Service Area: 78 Member Cities and Towns



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APPENDIX I 1984 STATISTICS

Population of 78 communities in MBTA district (1980 U.S. Census-Preliminary) 2,608,638

Number of Routes

Bus 153
Streetcar 5
Rapid Transit 3
Trackless Trolley 4
Commuter Rail 8

Number of Vehicles (Active Fleet)

Buses 1,002
Streetcars (PCCs: 85; Light Rail Vehicles: 144) 229
Rapid Transit Cars 354
Trackless Trolleys 50
Commuter Rail (locomotives: 44; coaches: 211) 255

Passengers

Weekday Passengers 589,500
Basic MBTA system (estimated): 548,200
Commuter Rail (actual): 41,300

Annual Passengers 171,200,000
Basic MBTA system (estimated): 160,000,000
Commuter Rail (actual): 11,200,000

Stations

Rapid Transit, including Riverside and Mattapan lines 85
Commuter Rail 84

Track Miles (One-way)

Subway 16.7
Bridges, elevated and surface 48.2

Route Miles (One-way)

Rapid Transit 44.7
Red Line: Davis-Ashmont: 11.0
Davis-Braintree: 16.7
Orange Line: Forest Hills-Oak Grove: 10.8
Blue Line: Bowdoin-Wonderland: 6.2

Rapid Transit under construction 7.9
Red Line Northwest Extension: 3.2
Southwest Corridor Orange Line relocation: 4.7

Streetcar 34.8
Riverside-North Station: 12.0; Arborway-Park: 5.7;
Lake Street-Lechmere via Commonwealth Ave.: 8.0;
Cleveland Circle-Lechmere via Beacon St.: 6.6;
Ashmont-Mattapan: 2.5

Trackless Trolley 15.75

Bus 700.00

Commuter Rail 242.00

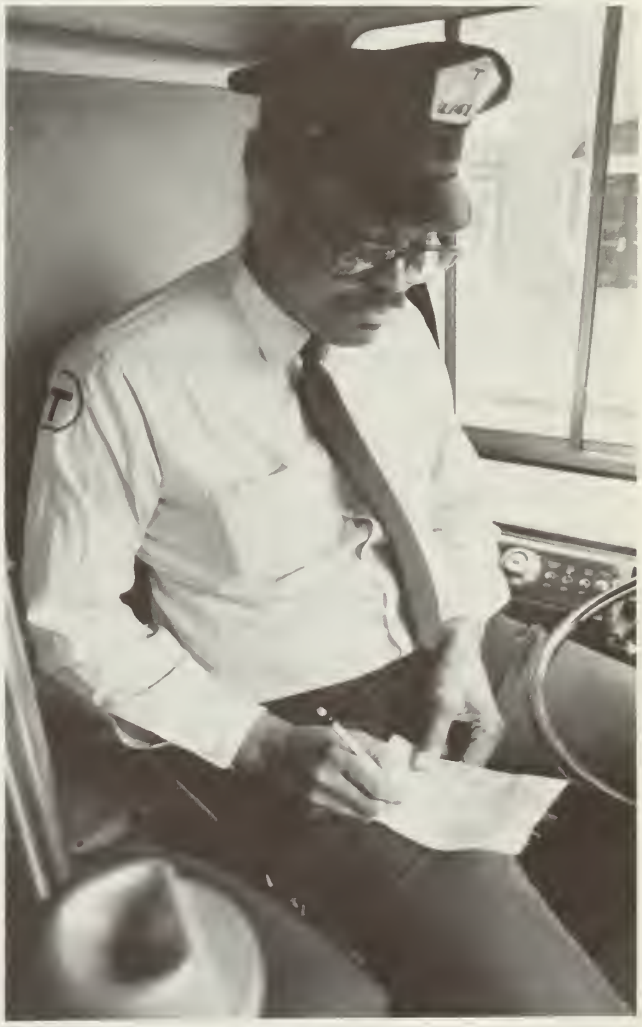
North Station: to Gardner: 65; to Lowell: 25;
to Haverhill: 33; to Ipswich: 9;
to Rockport: 35

South Station: to Framingham: 22; to Franklin: 18
to Stoughton: 4; to Attleboro: 31

Manpower

Employees (operating budget) 5,498

Collective Bargaining Units 14



APPENDIX II
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

COMPARISON OF NET COST OF SERVICE - 12 MONTH PERIOD CALENDAR YEARS 1984 VERSUS 1983

	Actual 1984	Actual 1983	Increase or (Decrease)
Income:			
Revenue from transportation	$101,021,207.63	$94,940,086.48	$6,081,121.15
Revenue from other Railway Operations	4,409,950.05	3,784,834.41	625,115.64
Non-operating income	5,482,438.03	7,689,134.34	(2,206,696.31)
Gas & diesel tax reimbursement	464,069.00	484,588.42	(20,519.42)
Reimbursement from outside district	495,155.00	1,274,052.00	(778,897.00)
Total Income	111,872,819.71	108,172,695.65	3,700,124.06
Operating Wages and Fringe Benefits:			
Wages	162,173,956.72	145,869,188.17	16,304,768.55
Gen. & adm. cost capitalized credit	(1,380,520.04)	(1,356,704.64)	(23,815.40)
MBTA pensions	22,543,007.96	20,537,685.01	2,005,322.95
Social Security taxes	12,682,625.17	11,047,111.49	1,635,513.68
Workers' compensation	5,069,550.64	6,054,220.36	(984,669.72)
Accident & sickness insurance	450,733.09	399,981.54	50,751.55
Group life insurance	598,632.28	622,734.48	(24,102.20)
Blue Cross/Blue Shield	22,818,755.13	20,947,839.42	1,870,915.71
Unemployment insurance	88,100.00	77,000.00	11,100.00
Uniform & work clothes	507,404.39	552,127.68	(44,723.29)
Fringe benefits cost capitalized-credit	(8,052,377.37)	(7,296,003.91)	(756,373.46)
Total Operating Wages and Fringe Benefits	217,499,867.97	197,455,179.60	20,044,688.37
Operating Expenses and Taxes:			
Materials & other items	39,488,226.21	36,981,094.00	2,507,132.21
Injuries & damages	7,557,144.30	4,278,971.95	3,278,172.35
Interest on unfunded debt	12,602,351.81	14,411,611.21	(1,809,259.40)
Fuel	23,816,990.03	20,589,065.43	3,227,924.60
Taxes (other than included above)	1,007,199.27	957,251.80	49,947.47
Railroad commuter subsidy	49,152,600.29	43,226,411.44	5,926,188.85
Local service subsidies	2,407,314.14	1,942,515.47	464,798.67
Total Operating Expenses and Taxes	353,531,694.02	319,842,100.90	33,689,593.12
Fixed Charges:			
Interest on funded debt (MTA)	4,796,192.00	4,713,326.27	82,865.73
Interest on funded debt (MBTA)	38,726,072.99	35,039,330.35	3,686,742.64
Payment on funded debt (MTA)	2,882,925.93	2,752,925.94	129,999.99
Payment on funded debt (MBTA)	18,865,000.00	17,015,000.00	1,850,000.00
Miscellaneous debits (MTA)	112,634.45	37,814.13	74,820.32
Bank service charges (MBTA)	145,792.55	116,518.71	29,273.84
Total Fixed Charges	65,528,617.92	59,674,915.40	5,853,702.52

APPENDIX II

	Actual 1984	Actual 1983	Increase or Decrease
Total Current Expenses	419,060,311.94	379,517,016.30	39,543,295.64
Cost of Service in Excess of Income	307,187,492.23	271,344,320.65	35,843,171.58
Less: State and Federal Assistance:			
Chapt. 161A of G.L. (Sec.28) - MTA	3,000,000.00	3,000,000.00	—
Chapt. 161A of G.L. (Sec. 28) - MBTA	50,695,001.62	46,176,296.29	4,518,705.53
Chapt. 191, Acts of 1982 - MBTA (RR)	—	2,814,254.00	(2,814,254.00)
Chapt. 289, Acts of 1983 - MBTA (RR)	3,946,236.00	3,227,500.00	718,736.00
Chapt. 234, Acts of 1984 - MBTA (RR)	3,734,400.00	—	3,734,400.00
Chapt. 234, Acts of 1984 - MBTA	—	104,862,532.30	(104,862,523.30)
Chapt. 140, Acts of 1985 - MBTA	125,543,540.20	—	125,543,540.20
Fed. operating assist., sec. 5 & 9	26,498,651.00	21,338,201.00	5,160,450.00
Total Assistance	213,417,828.82	181,418,783.59	31,999,045.23
Net Assessable Cost of Service-loss	93,769,663.41	89,925,537.06	3,844,126.35

(NOTE: Cities and towns capped at $102.3 million in 1984 and $99.8 million in 1983.)

APPENDIX III CHAPTER 581

Definition

Chapter 581 of the Acts of 1980 was enacted by the Legislature and signed by the Governor on December 7, 1980. This Chapter is commonly known as the Management Rights Act because it provides MBTA management with the capability to operate the Authority in a manner consistent with normal management prerogatives. These prerogatives, which include most of the major provisions of the Act, include the following:

1. The right to direct, appoint, employ, assign and promote officers, agents and employees.
2. The right to discharge and terminate employees, subject to specific clauses which prohibit such discharge or termination on the basis of race, color, religion, sex, age, national origin, handicapping condition, marital status, political affiliation, or union activities.
3. The right to plan and determine the levels of service provided by the Authority.
4. The right to direct, supervise, control, and evaluate the Authority's departments, units, and programs, as well as the right to classify positions and establish duties and productivity standards.
5. The right to develop and determine levels of staffing and training.
6. The right to determine whether goods or services should be made, leased, contracted for, or purchased on either a temporary or permanent basis.
7. The right to assign and apportion overtime.
8. The right to hire part-time employees.

Other provisions of the Act include, but are not limited to, various items concerning the responsibilities of the Board of Directors, the sale of notes and bonds, and the change in the Authority's budget from a calendar year basis to the state fiscal year as of July 1, 1983.

Due to a union appeal of this legislation, implementation of Chapter 581 did not occur until October 22, 1981, after the Federal Appeals Court affirmed the legality of the Act's provisions.

Many new measures implemented under Chapter 581 since 1981 have enabled the MBTA to increase service by several million miles, reduce fuel consumption and increase reliability of service, for a total cost savings of $74.4 million.

APPENDIX IV
OUTLINE OF SIGNIFICANT MBTA EVENTS IN 1984

January 3 - $2.5 million rebuilding of Suffolk Downs station on the Blue Line is completed.

January 20 - A six-alarm fire destroys the wooden trestle at Drawbridge No. 1. Commuter Rail trains, serving 13,000 riders a day, are blocked from using North Station.

February 1 - Crime statistics for 1983 released. Overall crime down 16.4 percent from 1982. MBTA police also arrested 837 people, a 25 percent increase over the 669 figure from 1982.

February 6 - MBTA Board of Directors signs agreement with Urbanarts Inc. of Boston to develop and administer an art program for the Southwest Corridor Project. Permanent works of art will adorn each of nine new stations on the Southwest Corridor Project.

March 12 - MBTA expands Commuter Rail service one week before the reconstruction of the Southeast Expressway begins. New schedules include 10 new trips during the a.m. and p.m. rush hours and 28 off-peak trips on the four commuter lines serving the southern area.

March 14 - MBTA signs contract with Urban Transportation Development Corp., Inc. of Detroit for the purchase of 54 new Red Line cars. Cost: $519 million, 80 percent federal funds.

March 28 - MBTA Pass Program celebrates its 10th anniversary.

March 28 - James F. O'Leary reappointed as General Manager of the MBTA. O'Leary first named to the post in 1981.

April 10 - Twenty-two new MBTA police officers sworn-in by Governor Michael S. Dukakis. Crime declined 24 percent during first quarter of 1984.

June 7 - Groundbreaking ceremonies are held for the new South Station, the first of a three-phase $106 million transportation and development program designed to revitalize and expand historic South Station.

June 8 - The Harvard Square kiosk, dismantled four years earlier as part of the Red Line extension, returns to its historic site in Harvard Square, becoming the centerpiece of an attractive new plaza.

June 19 - MBTA adopts a far-reaching affirmative action program containing 65 new procedures for recruiting, training and promoting employees.

June 27 - MBTA Board of Directors awards an $11.3 million contract to Kiewit Eastern to begin the reconstruction of the North Station trestle, destroyed by fire on January 20, 1984.

August 15 - THE RIDE, a service for riders with special needs, expands to Arlington and Belmont.

September 19 - First female lieutenant sworn-in at the MBTA Police Department.

October 31 - MBTA Board of Directors approves the appointment of Walter Prince as General Counsel to the Authority.

October 31 - MBTA Board of Directors awards $8.7 million to J.F. White Co. to replace track, ballast, and ties on the Green Line from North Station to Boylston Street.

November 14 - MBTA Board of Directors approves $35.4 million contract with General Electric to rebuild 75 Red Line Silverbird cars.

November 15 - Rider, a new bi-monthly newsletter designed for MBTA passengers, is published for the first time.

APPENDIX IV

November 16 - Fire destroys the Beverly-Salem bridge and trestle on the Eastern Line commuter route.

December 8 - Porter and Davis stations on the Red Line Northwest Extension are officially dedicated.

December 17 - MBTA Board of Directors approves $6 million to replace Beverly-Salem bridge and trestle destroyed by fire on November 16, 1984.

December 20 - THE RIDE expands to Revere.

December 20 - MBTA unveils a new $4 million system designed to allow MBTA police to communicate underground.

December 21 - THE RIDE expands to Medford.

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FINANCIAL STATEMENTS 6

TO THE BOARD OF DIRECTORS OF MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

We have examined the balance sheet and statement of bonds payable of the MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (a political subdivision of the Commonwealth of Massachusetts) as of December 31, 1984 and 1983, and the related statements of revenue and cost of service, unreimbursed cost of service and changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included in such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the financial statements referred to above present fairly the financial position of the Massachusetts Bay Transportation Authority as of December 31, 1984 and 1983, and the results of its operations and the changes in its financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis, after restatement for the change, with which we concur, in the method of accounting for compensated absences as described in Note 1 (h) to the financial statements.

April 10, 1985

Arthur Anderson and Company

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
BALANCE SHEET — DECEMBER 31, 1984 AND 1983

ASSETS	($000 Omitted)	
	1984	1983
TRANSPORTATION PROPERTY, at cost (Notes 1 and 7):		
Transportation property in service	$1,614,998	$1,377,457
Less - Accumulated depreciation	341,632	305,349
	$1,273,366	$1,072,108
Construction in progress	1,068,548	997,285
Property held for expansion (Note 8)	13,574	13,574
	$2,355,488	$2,082,967
SPECIAL FUNDS, consisting of cash and certificates of deposit:		
Settlement funds (Note 7)	$ 57,245	$ 57,552
Construction funds	56,087	20,668
Federal grant and other special funds (Notes 1 and 6)	36	1,658
	$ 113,368	$ 79,878
DEFERRED CHARGES	$ 11,433	$ 12,436
CURRENT ASSETS:		
Cash	$ 10,632	$ 7,897
Temporary cash investments	21,135	20,364
Accounts receivable —		
Commonwealth of Massachusetts (Notes 1 and 2)	239,717	180,290
Federal Department of Transportation (Note 3)	—	16,178
Other	11,014	9,986
Materials and supplies, at average cost	23,026	20,034
Prepaid expenses	7,001	4,142
	$ 312,525	$ 258,891
	$2,792,814	$2,434,172

The accompanying notes are an integral part of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
BALANCE SHEET — DECEMBER 31, 1984 AND 1983

LIABILITIES	($000 Omitted)	
	1984	1983
LONG-TERM DEBT, exclusive of current maturities:		
Bonds payable (See separate statement and Note 5)	$ 665,589	$ 597,845
Loans payable to Federal Department of Transportation, including accrued interest of $4,714 in 1983 (Note 8)	—	12,059
	$ 665,589	$ 609,904
UNREIMBURSED COST OF SERVICE (Note 1)	$ (42,483)	(46,831)
GRANTS (Notes 1, 6 and 8):		
Federal grants	$1,875,647	$1,626,821
State and local grants	41,982	27,636
	$1,917,629	$1,654,457
Less - Accumulated amortization	166,010	137,843
	$1,751,619	$1,516,614
COMMITMENTS AND CONTINGENCIES (Notes 1, 6, 7, 8 and 10)		
DEFERRED CREDITS (Note 7)	$ 65,604	$ 58,780
CURRENT LIABILITIES:		
Current maturities of bonds payable	$ 22,956	$ 21,748
Notes payable (Note 5)	247,000	195,000
Accounts payable	30,042	28,767
Accrued liabilities -		
Payroll (Note 1)	16,624	16,322
Interest	21,956	20,216
Other	13,907	13,652
	$ 352,485	$ 295,705
	$2,792,814	$2,434,172

The accompanying notes are an integral part of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
STATEMENT OF REVENUE AND COST OF SERVICE
FOR THE YEARS ENDED DECEMBER 31, 1984 AND 1983

	($000 Omitted)	
	1984	1983
OPERATING REVENUE, not including local and federal assistance:		
Revenue from transportation	$ 101,021	$ 94,940
Revenue from other railway operations	4,410	3,785
	$ 105,431	$ 98,725
OPERATING WAGES AND RELATED EMPLOYEE BENEFITS:		
Wages	$ 162,951	$ 144,069
Medical and dental insurance	22,819	19,548
Pensions (Note 9)	22,543	20,538
Social security taxes	12,683	11,047
Workmen's compensation (Note 1)	5,069	6,454
Other	1,645	1,652
Employee benefit and general and administrative costs capitalized (Note 1)	(9,433)	(8,653)
	$ 218,277	$ 194,655
OPERATING EXPENSES:		
Materials and services	$ 41,895	$ 38,923
Depreciation and amortization	41,110	37,167
Fuel	23,817	20,589
Injuries and damages (Note 1)	7,557	5,279
Railroad commuter expense, net (Note 4)	51,453	43,226
Other	1,411	1,112
	$ 167,243	$ 146,296
OPERATING LOSS	$ (280,089)	$ (242,226)
NON-OPERATING INCOME (EXPENSE):		
Interest income	$ 7,108	$ 6,576
Sale of tax benefits	638	606
Provision for equipment removed from service (Note 10)	—	(2,496)
Other	506	57
	$ 8,252	$ 4,743
INTEREST EXPENSE:		
Long-term debt	$ (44,676)	$ (43,266)
Other	(15,226)	(14,411)
	$ (59,902)	$ (57,677)
COST OF SERVICE IN EXCESS OF REVENUE BEFORE EXTRAORDINARY LOSS	$ (331,739)	$ (295,160)
EXTRAORDINARY LOSS ON ADVANCE REFUNDING OF DEBT (Note 5)	—	(16,028)
COST OF SERVICE IN EXCESS OF REVENUE (Notes 1 and 2)	$ (331,739)	$ (311,188)

The accompanying notes are an integral part of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
STATEMENT OF UNREIMBURSED COST OF SERVICE FOR THE YEARS ENDED DECEMBER 31, 1984 AND 1983

	($000 Omitted)	
	1984	**1983**
BALANCE AT BEGINNING OF YEAR, as previously reported	$ (46,831)	$ (22,411)
Cumulative effect of change in accounting for compensated absences (Note 1)	—	(10,620)
BALANCE AT BEGINNING OF YEAR, as restated	(46,831)	(33,031)
ADD — Cost of service in excess of revenue	(331,739)	(311,188)
DEDUCT:		
Net cost of service reimbursable by the Commonwealth of Massachusetts, a portion of which is to be assessed by the Commonwealth to the cities and towns constituting the Authority (Note 2)	219,357	192,944
Contract assistance by the Commonwealth for debt service pursuant to Section 28 of Chapter 161A of the General Laws, as amended (Note 2)	54,094	48,777
Other contract assistance (Notes 2 and 4)	7,681	6,042
Reimbursement of the Authority's Net Cost of Service (Note 1)	$ 281,132	$ 247,763
Federal operating assistance pursuant to Sections 5 and 9 of the Urban Mass Transportation Act of 1964, as amended (Note 3)	$ 26,499	$ 21,338
Reimbursement of railroad commuter expense by government entities outside the Authority's area (Note 4)	495	1,274
State diesel and gasoline fuel taxes reimbursable to the Authority in accordance with Section 2 of Chapter 563 of the Acts of 1964	464	485
Other reimbursements	$ 27,458	$ 23,097
Amortization of grants (Notes 1 and 6)	$ 27,497	$ 26,528
BALANCE AT END OF YEAR	$ (42,483)	$ (46,831)

The accompanying notes are an integral part of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
STATEMENT OF CHANGES IN FINANCIAL POSITION FOR THE YEARS ENDED DECEMBER 31, 1984 AND 1983

	($000 Omitted)	
	1984	1983
OPERATIONS		
Cash Was Used For —		
Cost of service in excess of revenue before extraordinary loss	$ 331,739	$ 295,160
Charges to cost of service not requiring current expenditure of cash:		
Depreciation	(40,571)	(35,617)
Amortization of deferred charges	(1,329)	(2,412)
Provision for equipment removed from service	—	(2,496)
Cash used for operations before extraordinary loss	$ 289,839	$ 254,635
Extraordinary loss on advance refunding of debt	—	16,028
Cash used for operations	$ 289,839	$ 270,663
Increase (decrease) in working capital except for cash and temporary cash investments	(6,652)	2,545
Payment of bonds payable	21,748	21,748
Cash Used for Operations and Bond Payments	$ 304,935	$ 294,956
Cash Was Provided for Operations and Bond Payments By —		
Reimbursement of the Authority's Net Cost of Service	$ 281,132	$ 247,763
Other reimbursements	27,458	23,097
Other	(1,504)	285
Cash Provided for Operations and Bond Payments	$ 307,086	$ 271,145
CAPITAL AND FINANCING ACTIVITIES		
Cash Was Used For —		
Additions to transportation property, net	$ 313,092	$ 318,105
Bonds refunded	—	83,350
Increase in special funds	33,490	20,663
	$ 346,582	$ 422,118
Cash Was Provided By —		
Grants from federal and other sources, net	$ 235,005	$ 253,463
Increase in deferred credits	6,824	4,964
Issuance of bonds	90,000	183,550
Forgiveness of federal loan	16,108	—
	$ 347,937	$ 441,977
INCREASE (DECREASE) IN CASH AND TEMPORARY CASH INVESTMENTS	$ 3,506	$ (3,952)
Cash and Temporary Cash Investments —		
Beginning of year	28,261	32,213
End of year	$ 31,767	$ 28,261

The accompanying notes are an integral part of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

STATEMENT OF BONDS PAYABLE
DECEMBER 31, 1984 AND 1983

(Notes 5 and 6)

Massachusetts Bay Transportation Authority General Transportation System Bonds issued under General Laws, Chapter 161A, Section 23 of the Commonwealth of Massachusetts, are all payable in annual installments on March 1; interest is payable semiannually on March 1 and September 1. The bonds were issued to provide funds for the financing of the Authority's plant and equipment improvement program (dollar amounts in thousands).

	Description	Year of Maturity	Approximate Annual Principal Payments	Average Interest Rate	Bonds Outstanding December 31, 1984	Bonds Outstanding December 31, 1983
1967	Series A Bonds dated March 1, 1967	2007	$2,600	3.80%	$ 59,800	$ 62,400
1970	Series A Bonds dated Sept. 1, 1970	2010	1,540	6.41	39,940	41,480
1972	Series A Bonds dated Sept. 1, 1972	2012	865	5.29	24,120	25,440
1974	Series A Bonds dated June 1, 1974	2014	1,920	6.41	54,000	56,100
1977	Series A Bonds dated Sept. 1, 1977	2017	2,510	6.22	65,980	68,490
1979	Series A Bonds dated May 1, 1979	2019	1,700	6.96	51,500	53,200
1981	Series A Bonds dated Oct. 1, 1981	2001	2,250	12.93	13,500	15,750
1982	Series A Bonds dated April 1, 1982	2005	2,975	11.35	26,433	29,047
1983	Series A Bonds dated March 15, 1983	2008	1,970	9.35	111,579	112,840
1983	Series A Refunding Bonds dated Aug. 15, 1983	2004	1,030	9.07	70,940	71,210
1984	Series A Variable Int. Rate Bonds dated Nov. 1, 1984	2014	985	6.25	90,000	—
	Total General Transportation System Bonds Payable				$607,792	$535,957

The accompanying notes are an integral part of these financial statements.

STATEMENT OF BONDS PAYABLE
DECEMBER 31, 1984 AND 1983

(Notes 5 and 6)
(Cont'd)

Boston Metropolitan District (BMD) Bonds were issued for transit purposes prior to formation of the Massachusetts Bay Transportation Authority in 1964. For all issues except the Equipment Bonds, bond maturities in excess of the stated annual payments are refinanced and have been classified as long- term debt (dollars in thousands).

Description	Year of Maturity	Approximate Annual Principal Payments	Average Interest Rate	Bonds Outstanding December 31, 1984	1983
Boston Elevated Railway Company and Metropolitan Transit Authority Debt	2020	$1,000	5.97%	$ 35,918	$ 36,918
Purchase of City of Boston Transit Properties	2024	$ 665	4.97%	$ 21,451	$ 21,987
Equipment Serial Bonds	1987	$ 127	2.90%	$ 382	$ 510
	1988	131	2.90	524	655
	1993	169	3.00	1,521	1,690
	1993	100	3.20	900	1,000
				$ 3,327	$ 3,855
Construction Bonds	1988	$ 55	3.00%	$ 2,695	$ 2,750
	1989	70	3.60	3,483	3,553
	1990	19	3.50	969	988
	1992	60	8.73	400	460
	1993	40	3.20	2,160	2,200
	2002	575	9.26	10,350	10,925
				$ 20,057	$ 20,876
Total BMD Bonds Payable				$ 80,753	$ 83,636
Total Bonds Payable				$688,545	$619,593
Less: Current Maturities of Bonds Payable				22,956	21,748
Total Bonds Payable - Long-term				$665,589	$597,845

The accompanying notes are an integral part of these financial statements.

(1) Summary of Significant Accounting Policies

(a) Unreimbursed Cost of Service

The legislative act under which the Massachusetts Bay Transportation Authority (the "Authority") was established provides, among other things, that the Commonwealth of Massachusetts (the "Commonwealth") shall reimburse the Authority for its Net Cost of Service, as defined. This amount, to the extent it exceeds contract assistance (see Note 2), is then assessed by the Commonwealth to the cities and towns in the greater Boston Metropolitan Area constituting the Authority.

The Cost of Service in Excess of Revenue presented on the Statement of Revenue and Cost of Service differs from the Net Cost of Service because the Authority follows generally accepted accounting principles for financial reporting purposes. The following table reconciles the Authority's Cost of Service in Excess of Revenue to its Net Cost of Service for the years ended December 31, 1984 and 1983:

	($000 Omitted)	
	1984	**1983**
Cost of Service in Excess of Revenue	$ 331,739	$ 311,188
Expenses not assessable —		
Depreciation and amortization in excess of bond principal payments	$ 20,151	$ 18,260
Loss on equipment removed from service	—	2,496
Extraordinary loss on advance refunding of debt	—	16,028
Interest on federal loans, net of related property income	(79)	244
Cumulative property income	1,798	—
Accrued interest paid through refunding issue	—	3,300
Accrual for vacation pay earned in 1984	777	—
Accrual for back pay settlement	502	—
Reimbursements for —		
Contracted passenger service outside the Authority's area	495	1,274
State fuel taxes	464	485
Federal operating assistance	26,499	21,338
	$ 50.607	$ 63,425
Net Cost of Service	$ 281,132	$ 247,763

(b) Change in Year End

Since 1971, the Authority has operated, and its Net Cost of Service has been assessed by the Commonwealth, on a calendar year basis. Legislation enacted in 1980, however, stipulated that, as of July 1, 1983, the Authority's fiscal year be changed from the calendar year to a July 1 - June 30 fiscal year to coincide with the fiscal year of the Commonwealth and its cities and towns. Under other provisions of its enabling legislation, the Authority will continue to report its Net Cost of Service to the Commonwealth on a calendar year basis for reimbursement and assessment purposes.

(c) Transportation Property

Transportation property is stated at historical cost. These costs include Authority labor costs for employees working on capital projects plus related fringe benefits and an allocated share of general and administrative costs.

(d) Depreciation

Depreciation is provided in the accounts based on the straight-line method at rates which are designed to amortize the original cost of the property over its estimated useful life. The major categories of transportation property in service and the depreciation rates used in 1984 are:

	Rates			($000 Omitted)	
	Low	High	Average	1984	1983
Ways and Structures	1.23%	10.0%	2.16%	$1,094,589	$ 863,471
Equipment	2.0	20.0%	5.08%	429,239	431,812
Land	—	—	—	91,170	82,174
				$1,614,998	$1,377,457

(e) Deferred Charges

Certain costs incurred by the Authority, primarily related to the expansion and modernization of its transportation system, have been deferred. These costs are amortized by charges to cost of service over the future periods in which the benefit to the Authority is estimated to be realized.

(f) Casualty and Liability Costs

The Authority is engaged in numerous matters of routine litigation. These matters include tort and other claims for injuries and damages for which the Authority is self-insured to the extent of $1,000,000 per accident ($500,000 per non-rail accident). Insurance coverage is carried on claims in excess of that amount up to a maximum limit of $50,000,000. In the opinion of the General Counsel to the Authority, these matters are not reasonably expected to require amounts to be paid that in the aggregate would be material to the financial information contained herein. The Authority, historically, has appropriated approximately $5 million annually for injury and damage claims. It should be noted, however, that the rate of expenditure on a cash basis for the present fiscal year is exceeding that which traditionally has occurred.

If the present rate of expenditure continues, the Authority may use its entire appropriation prior to the end of the Authority may use its entire appropriation prior to the end of the fiscal year. If this does occur, it will be necessary for the Authority, through its Advisory Board, to seek additional funding for settlements. Other cases and claims include disputes with contractors and others arising out of the Authority's capital construction program. In the opinion of the General Counsel to the Authority, amounts reasonably expected to be paid by the Authority would be within the scope of grant funds and other monies available to the Authority for the respective projects.

(g) Workers' Compensation Expense

The Authority is a self-insurer for settlements for workers' compensation to the extent of $200,000 per occurrence. Insurance is carried for amounts in excess of that amount. The Authority accounts for these claims by charges to operating expenses as payments are made.

(h) Change in Accounting for Compensated Absences

In accordance with the National Council on Governmental Accounting Statement No. 4, the Authority has retroactively accrued for vested vacation pay.

The required accrual as of December 31, 1983, $10,620,000, has been recorded as an adjustment to the opening unreimbursed cost of service. The 1984 calendar year effect of adopting this method of accounting for compensated absences was to increase cost of service in excess of revenue by $777,000.

(i) Grants

The Authority receives capital grants from certain governmental agencies to be used for various purposes connected with the planning, modernization and expansion of transportation facilities and equipment. Amortization of these grants begins when the related facilities and equipment are put into service. The grants are then amortized over the shorter of the estimated useful life of the assets or forty years. The amortization is reflected as a reduction of unreimbursed cost of service.

The Authority also receives grants to fund its operating deficits from the Commonwealth and the federal government (see Notes 2 and 3).

(j) Reclassification of Prior Year Amounts

Certain 1983 balance sheet amounts, previously reported, have been reclassified in order to be consistent with the 1984 presentation.

(2) Contract Assistance from the Commonwealth

The Authority is reimbursed for its Net Cost of Service by the Commonwealth. A portion of this reimbursement is provided specifically in the form of contract assistance for debt service. The Commonwealth assesses a portion of the Net Cost of Service, after reducing it by the reimbursement for debt service, to the cities and towns constituting the Authority, up to the legislated limit. Contract assistance for 1984 and 1983 is summarized as follows:

(a) Debt Service

The legislative act authorizing the Authority to issue debt securities provides for contract assistance for the payment of annual debt service costs on bonds issued by the Authority as follows: on the bonds issued prior to January 1, 1971, the debt service is eligible for contract assistance at either 50% or 90%, as provided by contract; on bonds and bond anticipation notes issued after January 1, 1971, 90% of the debt service is eligible for contract assistance. However, regardless of when issued, contract assistance, under the current statute, will not be available on the debt service of more than $735,300,000 of bonds outstanding at any one time. Additionally, the Commonwealth pays a maximum of $3,000,000 annually for the debt service relating to BMD debt. The Authority was eligible for contract assistance of $54,094,000 in 1984 and $48,777,000 in 1983 relating to debt service.

(b) Operating Assistance

The Authority's Net Cost of Service reimbursable by the Commonwealth, after deducting the debt service and commuter rail operations contract assistance, is $219,357,000 for 1984 and $192,944,000 for 1983. The amount to be assessed by the Commonwealth for the calendar year 1984 to the cities and towns comprising the Authority is limited to $102,304,609, which is 102½% of the amount assessed (including state borrowing charges) in calendar year 1983.

Contract assistance for commuter rail service outside the Authority's district is provided by statute each year. Contract assistance for commuter rail service amounted to $7,681,000 in 1984 and $6,042,000 in 1983 (see Note 4).

(3) Federal Operating Assistance

Section 5 of the Urban Mass Transportation Act of 1964 (the 1964 Act), as amended, provided federal operating assistance through the 1983 federal fiscal year on the basis of a statutory formula.

The Surface Transportation Act of 1982 (the Surface Act) amended the 1964 Act by replacing Section 5 assistance with a new Section 9 assistance under which both capital and operating grants will be made. The Authority received $26,499,000 of total operating assistance in 1984 and $21,383,000 in calendar year 1983. The President in his recent budget proposals has recommended reductions in the amount of federal operating assistance and capital assistance as to new projects for mass transit purposes. The General Manager has indicated that, if the President's recent proposals were adopted by Congress in any significant way, the Authority would be forced with respect to operations to seek more aid from the Commonwealth, raise fares or cut service (including reducing the number of Authority employees) or some combination thereof and with respect to new capital projects, to eliminate or reduce the size of such projects.

(4) Railroad Commuter Subsidies

Under Chapter 161A Section 3(f) of the General Laws, the Authority may enter into agreements with private transportation companies, railroads and other concerns providing for joint or cooperative operation of any mass transportation facility and for operation and use of any mass transportation facility and equipment for the account of the Authority.

On February 23, 1982, the Authority entered into a new five-year operating agreement with the Boston and Maine Corporation, Debtor (B & M), to provide commuter railroad service over the Authority's rail lines. The Authority has agreed to pay the B & M for direct and indirect service expenses, a management fee and ridership and performance incentives that may be reduced in case of noncompliance. In the event that the Advisory Board fails to approve the annual budgetary provision for any of this service, the agreement shall terminate subject to certain labor protection obligations.

The costs and related operating assistance of commuter rail service, excluding depreciation, are summarized below:

	($000 Omitted)	
	1984	**1983**
Passenger revenues	$ 16,686	$ 16,842
Operating costs, excluding depreciation of Authority-owned property devoted to commuter rail service	68,139	60,068
Railroad commuter expense reflected in statement of revenue and cost of service	$ 51,453	$ 43,226
Less: Operating assistance from state and local sources —		
State contract assistance	(7,681)	(6,042)
Reimbursement from entities outside the Authority's area	(495)	(1,274)
Total cost, net of commuter rail operating assistance	$ 43,277	$ 35,910

(5) Short-Term Borrowings and Long-Term Debt

Short-term borrowings outstanding as of December 31, 1984 and 1983 are as follows:

	($000 Omitted)	
	1984	**1983**
Notes Payable	$ 160,000	$ 195,000
Commercial Paper	87,000	—
	$ 247,000	$ 195,000

On May 16, 1984, the Board of Directors approved a Commercial Paper Program which allows the Authority to issue up to $100,000,000 in commercial paper. From May 29, 1984 through December 31, 1984, th Authority issued $87,000,000 in commercial paper with interest rates ranging between 4.75% and 7.10% with dates of maturity between July 11, 1984 and April 9, 1985. Substantially all of the commercial paper outstandin at December 31, 1984 has been subsequently rolled-over at interest rates ranging from 4.125% to 6.7%.

The following notes payable were outstanding as of December 31, 1984:

Due Date	Interest Rate	Principal Amount ($000 Omitted)
March 22, 1985	6.6%	$ 125,000
October 1, 1985	7.15%	35,000
		$ 160,000

On March 5, 1985, $140,000 of notes payable were issued at an interest rate of 5.75% due March 5, 1986. The proceeds were used to refinance $125,000 of notes maturing March 22, 1985 and to repurchase $15,000 of commercial paper maturing April 4, 1985.

Approximate annual maturities of long-term debt as of December 31, 1984, are as follows:

	($000 Omitted)
1985	$22,956
1986	23,733
1987	23,682
1988	26,315
1989	27,104

The legislative act under which the Authority was established provides that, if at any time any principal or interest is due on any bond or note issued or assumed by the Authority and funds to pay the same are not available, the Commonwealth shall thereupon remit to the Authority the amount required to meet such obligations.

On August 18, 1983, the Authority issued $71,210,000 of refunding bonds in order to advance refund $24,750,000 of 14.2% 1981 General Transportation System Bonds and $28,600,000 of 13.2% 1982 General Transporation System Bonds (the Refunded Bonds). The proceeds from the refunding after expenses were deposited with a trustee who used the proceeds to purchase direct obligations of federal, state and local governments, thereby defeasing the Refunded Bonds. The government obligations will mature at such time and yield interest in such amounts so that sufficient monies will be available therefrom to pay principal and interest on the refunded debt as it matures. The refunding resulted in a reported book loss of $16,028,000 which has been recognized as of the date of the refunding and will be offset in future years through reduced interest payments. The loss did not affect the Net Cost of Service because bond principal payments and related interest are assessed only when paid by the Authority. The loss has been charged to the unreimbursed cost of service account and will be offset through reduced debt service over the term of the new bonds.

(6) Plant and Equipment Improvement Program

The Authority's continuing program for mass transportation development has projects in service and in various stages of approval, planning and implementation with a total estimated cost of $4.65 billion. As of December 31, 1984, projects with an estimated cost of $3.42 billion have been approved with $2.49 billion to be provided from federal grants, $138 million from state and local sources, and $797 million from Authority bonds. As of December 31, 1984, the Authority has expended $2.57 billion on this program which has been financed through the receipt of $1.83 billion of federal grants, $661 million of the Authority's General Transportation System Bonds and $77 million from other state and local sources.

Funding for remaining estimated project costs of $1.23 billion is expected to be provided by $959 million from federal and other sources and $266 million from bond proceeds. Currently, the authorized debt ceiling for MBTA bonds is $867.3 million. Of this amount, $478.3 million may be issued only once, and any bonds maturing or redeemed on or after January 1, 1986 may not be reissued, thereby reducing the amount of bonds which may be outstanding at any one time. As of December 31, 1984, debt requirements for the entire program are within currently authorized limits.

The terms of the federal grant contracts require the Authority to utilize the equipment and facilities for the purpose specified in the grant agreement, maintain these items in operation for a specified time period, which normally approximates the useful life of the equipment, and comply with the equal employment opportunity and affirmative action programs required by the Urban Mass Transportation Act of 1964, as amended. Failure to comply with these terms may jeopardize future funding and require the Authority to refund a portion of these grants to the Federal Department of Transportation. In management's opinion, no events have occurred that would result in the termination of these grants or require the refund of a significant amount of funds received under these grants.

As of December 31, 1984, the Authority had outstanding commitments related to the improvement program amounting to approximately $337 million.

(7) Settlement Funds

As part of the Authority's program for mass transportation improvement, the Authority entered into a grant contract with the Urban Mass Transportation Administration (UMTA) providing for the purchase of 175 light rail vehicles, spare components and various engineering support at an estimated project cost of $68,305,000 of which $48,084,000 was to be provided by an UMTA grant. In 1972, the Authority entered into a contract with a manufacturer for the purchase of these vehicles, components and related engineering support. The 135 vehicles delivered pursuant to this contract experienced a variety of operating and maintenance problems which led to a series of disputes between the manufacturer and the Authority. In 1979, an agreement was reached with the manufacturer which released the manufacturer from all liability related to the vehicles in return for modification parts and a cash settlement.

The Urban Mass Transportation Administration has concurred with the agreement provided that the cash settlement and associated interest income will be used along with funds remaining from the original grant to provide 175 vehicles with equivalent capacity available for revenue service. Authority management intends to utilize the funds in accordance with the original purposes of the 1972 grant application.

At December 31, 1984, the amount shown as settlement funds reflects the settlement proceeds from the manufacturer plus interest realized on the proceeds since the date of the settlement less expenditures made for eligible project costs.

(8) Loans Payable to Federal Department of Transportation

In 1973, the Authority purchased 145 miles of right-of-way and related properties in eastern Massachusetts from the Penn Central Railroad. This purchase was financed with a $19.5 million (6.875% interest rate) loan from the Federal Department of Transportation.

In 1976, the Authority purchased certain assets of the B & M, including right-of-way, revenue equipment, track and related properties. The cost of $39.5 million was financed with a $24,173,000 (8% interest rate) loan from the Federal Department of Transportation secured by the assets purchased, a $12,262,000 Federal Department of Transportation grant and $3,065,000 of local funds.

Of the property purchased, right-of-way and yards of $13,574,100 are not presently in transit use by the Authority and are being held for future expansion. The properties acquired are pledged as security for the loans.

On January 6, 1983, pursuant to the Surface Transportation Act of 1982, 80 percent of the outstanding principal and interest accrued on these loans was forgiven by the federal government. On September 4, 1984, the Federal Department of Transportation approved the Authority's application for a grant to forgive the remaining 20% of the outstanding principal and interest accrued on the loans. The entire forgiveness is contingent upon the Authority committing the total sum of $16,042,409 to a program of projects for the rehabilitation of its commuter rail system, over a period not to exceed two years following the date of approval of the grant application. The Authority intends to fulfill this requirement and has committed $16,734,000 to date. The amount of principal and interest forgiven as of December 31, 1984 and 1983 have been reflected as a federal grant.

(9) Retirement Plans

The Authority provides pension benefits to employees through a contributory defined-benefit retirement plan. The plan currently requires the payment by the Authority of an amount equal to approximately 12% of the total payroll of the members of the plan. The amount of employee and Authority contributions to the plan is intended to fund normal cost, interest on the unfunded liability and administrative expenses. The Authority is not legally obligated to fund the unfunded actuarial liability which approximated $160,592,000 as of December 31, 1983 and $155,621,000 as of December 31, 1982, the dates of the latest actuarial valuations.

Annual pension expense for the plan is computed based on a projected benefit method using a compounded annual interest rate of seven percent and a salary increase factor of five and one-half percent. The cost of the plan to the Authority was approximately $20,122,000 for 1984 and $18,416,000 for 1983. The accumulated plan benefits and plan net assets, determined as of December 31, 1983 and 1982, are as follows:

	1983	1982
Actuarial present value of accumulated plan benefits:		
Vested	$410,322,000	$374,007,000
Nonvested	4,512,000	3,235,000
	$414,834,000	$377,242,000
Net assets available for benefits	$366,832,000	$336,290,000

On January 1, 1984, an additional contributory retirement fund was started for the employees of the MBTA Policeman Association. These employees were not eligible to participate in the MBTA Retirement Fund. The plan requires the Authority to pay an amount equal to approximately 12% of total payroll of the members. The plan has 97 members at December 31, 1984 and the cost of the plan to the Authority was approximately $300,000 for the year ended December 31, 1984. The plan has not been subject to an actuarial valuation.

The Authority has also entered into agreements with certain salaried employees to provide supplemental pension benefits after retirement. Employees must have at least ten years of service and be eligible under the provisions of the contributory retirement plan to receive these benefits. At December 31, 1984, approximately 790 employees were either receiving supplemental benefits or will be eligible to receive them upon retirement. Expense under this plan is computed based upon an entry age actuarial cost method, forty year amortization of unfunded actuarial liability, an annual interest rate assumption of nine percent and a salary increase factor of seven percent compounded annually. The Authority's practice under this plan, is to provide a reserve for pension costs as the benefits accrue.

Supplemental benefits expense was $1,358,000 for 1984 and $1,107,000 for 1983. The accumulated plan benefits and plan reserve as of January 1, 1984 and 1983, the date of the latest actuarial valuation, are as follows:

	1984	1983
Actuarial present value of accumulated plan benefits:		
Vested	$ 8,182,000	$ 6,975,000
Nonvested	2,528,000	2,092,000
	$10,710,000	$ 9,067,000
Reserve available for benefits	$ 2,302,216	$ 2,116,000

Additionally, the Authority is obligated to pay pension and medical benefits to retired employees not eligible for membership in the retirement plan and life and medical insurance costs of retired employees. The expense to provide these benefits was $7,658,000 in 1984 and $7,664,000 in 1983.

(10) Provision for Equipment Removed from Service

In 1983, a provision was made to write off the remaining book value of buses which had been removed from revenue service. The cost of the buses was 80% funded by the federal government. The Authority intends to use construction funds to the extent, if any, the government requires repayment of those funds.

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HAVERHILL
OAK GROVE
MALDEN CENTER
WELLINGTON
SULLIVAN SQUARE
TO LOWELL
WINCHESTER
ALEWIFE
DAVIS
PORTER
TO SOUTH ACTON
LITTLETON
FITCHBURG
GARDNER
HARVARD
CENTRAL
CAMBRIDGE CENTER/M.I.T.
CHARLES/MGH
LECHMERE
Green Line
SCIENCE PARK
COMMUNITY COLLEGE
NORTH STATION
HAYMARKET
BOWDOIN
GOVERNMENT CTR
PARK ST
STATE
WASHINGTON
BOYLSTON
ESSEX
ARLINGTON
COPLEY
BACK BAY
TO FRAMINGHAM
AUDITORIUM
PRUDENTIAL
KENMORE
SYMPHONY
DOVER
NORTHEASTERN
NORTHAMPTON
BRIGHAM
CIRCLE
DUDLEY
HEATH
EGLESTON
GREEN
Orange Line
LONGWOOD
AVE.
BOSTON
COLLEGE
B
CLEVELAND
CIRCLE
C
RIVERSIDE
D
RESERVOIR
ARBORWAY
E
FOREST
HILLS
TO STOUGHTON
FRANKLIN
ATTLEBORO
WONDERLAND
Blue Line
REVERE BEACH
BEACHMONT
TO BEVERLY
IPSWICH
ROCKPORT
SUFFOLK DOWNS
ORIENT HEIGHTS
WOOD ISLAND
AIRPORT
MAVERICK
AQUARIUM
SOUTH STATION
BROADWAY
ANDREW
Red Line
J.F.K./
U.MASS
SAVIN HILL
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